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SEPTEMBER 18, 1907.

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Diminishing Infant Mortality

MR. M. O. LEIGHTON, in an article in *Popular Science Monthly* a few years ago, estimated by a method of calculation that the value of a human life varies from \$1,000 to \$7,500, depending upon the age, the smaller sum being the value of the average human being over 65 years of age, and the higher being the value of one between 25 and 30. Children up to five years of age he estimates as being worth \$1,500 each. It therefore follows that anything which will decrease the mortality in our cities adds greatly to the financial assets embodied in its citizens. Mr. Nathan Straus, of New York, has for fifteen years been dispensing pasteurized milk in the city, and during this time has furnished 18,710,892 bottles and 10,089,674 glasses of this milk, almost 3,000,000 bottles and 1,250,-

000 glasses being recorded for the present year. Just what the effect of this has been upon the mortality of the infants and invalids of the poorer sections of the city, it is impossible to know or even to estimate, since coincident with this work of Mr. Straus has been improvement along all lines of sanitation; but statistics compiled by his secretaries and others would seem to indicate that the number runs high into the thousands. As the result of the various improvements in sanitary conditions of the poor in our larger cities, the infant mortality has decreased, we believe, by more than 80 per cent: during the last twenty-five years, and too much credit cannot be given, not only to Mr. Straus, but to all other philanthropists who have labored so faithfully and intelligently to produce this result. It may be thought that, looked at from an entirely utilitarian point of view, the death of children of the laboring classes is, in fact, no financial loss, since the immigration to this country is sufficient to fill the places which they would have occupied if alive. Even from this point of view, however, the reasoning is weak, since it is a fact, which must be admitted by all who are familiar with conditions, that while a great many of our immigrants are either undesirable citizens, or at best assimilate very imperfectly with our native population, the first generation born in this country are, in the majority of cases, most earnest patriotic citizens, and are, therefore, much to be preferred to freshly imported immigrants. Our cities can, therefore, engage in no work more to their advantage than that of preserving these infants of the poor. The problem of the city has for years been the most serious one confronting us and one of the most perplexing elements of this problem is that of the immigrant. The solution of this problem demands that preservation of the children go hand in hand with the avoidance of race suicide.

Standing in Public Vehicles

A TRANSPORTATION company, and that in the City of New York, has at last made and is enforcing the rule that a seat shall be furnished for every fare paid; this, of course, including its corollary that no passenger shall be admitted when the seats are all occupied. This can hardly be called a test case, however, or looked to for furnishing an illustration of how the method would work on other lines, since the vehicles referred to are automobile coaches running on Fifth avenue, at a velocity which renders them safe from any anti-speed penalty, and on which a fare of 10 cents is charged. It is therefore evident that they are not competing for any of the rush-hour traffic, and there is little evidence that any considerable number of prospective passengers have been denied admission. One difficulty has occasionally arisen, however, in that certain passengers, having paid their fares, insist upon standing instead of occupying vacant seats, and the difficulty confronting the conductors now takes the form of compelling passengers to be seated rather than to "move up front." A rigid enforcement of the rules, however, is already seen to work minor hardships to certain passengers, as when a family party,

desiring to enter a coach with but one vacant seat, must either divide or wait for a following one, or possibly many of them. Whether the construction of the coaches or rules of the company will permit a prominent presidential candidate or his physical equivalent, on alighting, to make room for three new passengers, we are not informed; but this suggests one of the difficulties in formulating and enforcing cast-iron rules of this kind.

Everything considered, this experiment cannot properly be taken by the advocates of "no seat, no fare" as a step in the direction of the end they seek; and as long as two or three million people wish to reach their places of business or of labor in New York between 7 and 9 o'clock and leave them between 4 and 6, until more than three tiers of transportation routes are constructed in our streets we cannot conceive how such a rule can be enforced in New York, or, in fact, in any of the larger cities.

Covering Water Filters

It is coming to be pretty generally recognized that, in the Northern States at least, it is desirable, from the point of economy alone, aside from any effect of the cold upon bacterial efficiency, to cover water filters as a protection against freezing in winter. The City of Providence, R. I., has experienced the difficulty common to most New England cities of keeping the beds free from snow and ice, the objection to which is not only the expense incurred in removing these, but that the bacterial efficiency of the beds is effected, and if the water surface is allowed to fall to the level of the sand, an appreciable amount of sand is necessarily removed with the ice, to which it adheres. The effect of cold weather and ice removal upon the efficiency of the filter is indicated in the case of the Providence plant by the fact that during the eight months of last year, from April to November inclusive, the mean percentage of bacteria removed was 97.7 per cent., while the efficiency during the remaining four months averaged 95.2 per cent. In consequence of this difficulty, the city contracted last year to cover the eight beds already in use,



REMOVING SNOW FROM FILTER BEDS AT PROVIDENCE, R. I.

as well as two new ones which have been constructed.

An idea of the labor and expense involved in removing snow and ice from the beds is conveyed by the accompanying illustrations.



REMOVING ICE FROM FILTER BEDS AT PROVIDENCE, R. I.

MUNICIPAL TOWN PLANNING AND LAND-OWNING

DURING the second week in August the eighth annual Housing Congress was held in London, at which were presented a number of interesting papers on Housing Inspection, the Land Question, House Building and Management, Finance and Taxation, Rural Housing, Town Planning, and Transit. On the subject of Town Planning, a paper was read by Dr. Stubben, of Berlin, outlining the methods employed in Germany and recommendations based upon experiences there. In this paper Dr. Stubben shows how bad planning of streets and building estates in the past has led to the creation of slum areas, which have now to be cleared and reconstructed at enormous expense. In new quarters new slums have been reproduced through excessively intensive use of land. Land not built on should be protected at once by town plans and building regulations. In Germany, without excluding the interests of private individuals in town development, they are subordinated to the public needs. Although there are drawbacks in regard to getting good officials and to foreseeing developments accurately, plans can always be altered, and a faulty plan is better than none. The general plan parcels out building sites and provides for small dwellings, medium-sized dwellings and large dwellings (the grouping and nature of these to be the subject of a site plan subsequently in many cases). The demands of traffic, health and beauty must be met. Traffic must be provided for by main arteries and by, say, three different grades of side streets, varying in width and construction as in importance, with open places at the meeting points.

The construction of cheaper streets is a vital question for working-class residential sites. Health must

be provided for by an adequate supply of light and air through wide streets or public open spaces in front of the dwellings. These should take up at least one-tenth of the land. Public parks, connected if possible by shady boulevards, to give opportunities for getting recreation and fresh air. Beauty should be secured by the advice and direction of the artist. German towns look forward for 25 to 35 years, therefore the area dealt with should equal that of the existing town. The general plan can deal also with existing districts, or where slums have been destroyed. Districts can be mapped out for several kinds of buildings, *i. e.*, factories, villa residences, working-class dwellings, isolated or semi-detached houses, and dwellings of various heights or arrangement.

By-laws can be applied to districts accordingly, thus constituting building districts or zones. Building regulations which prescribe 25 per cent. of open space on existing building sites in the old town may reasonably prescribe 1-3 or 1-2 or 2-3 open space in the new districts. The chief parts of the execution of a town plan consist in: (a) Limits on building; (b) compulsory taking or laying down streets and building lines; (c) rearrangement of plots of land; (d) allocation of certain districts for factories, etc.; (e) the right of changing about sites by bringing down each site to the same percentage as the community pays for street land is possessed in Baden, Saxony and Hamburg; in Prussia, only at Frankfort. The community can get back from owners the cost of road and drain making as soon as they build. A most important influence on the price of land is obtained by the community owning land within the general plan, and undoubtedly this is the best method of influencing the general plan and building question for good. Mr. Stubben is convinced that the needs of town building include numerous other means besides town planning, such as inspection, creation of a housing bureau, sanitary improvement of existing dwellings, reforms in taxation, cheaper money, leasing of public land for building, building in certain circumstances by the community itself, and all sorts of improvements in the means of communication.

The paper on the land question was contributed by a German also, Dr. Wilhelm Mewes, in which he advocates an idea which has previously been referred to by this journal—that cities should be empowered to profit by the increase in land values consequent on their growth, rather than that this entire appreciation in value should go to private owners.

Dr. Mewes first directs attention to the rapid growth of population in Germany. The big towns have doubled or trebled their population since 1870. Increased population means increased land values, and often to a greater proportionate extent. Examples are given of great increases in value: Berlin—Land worth £5,000 in 1860 jumped to £2,500,000 in 1898; Charlottenburg—Land valued at £300,000 in 1865 jumped to £15,000,000 in 1897; Munich—Land near slaughter-house, 4.91 marks per metre in 1865, 50 marks per metre in 1897. Dr. Mewes says the value of land depends on the use

to which it is put as a consequence of the working of supply and demand, which affects land exceptionally. Land companies have acquired the suburbs round many German towns. There are 72 land companies for Berlin and 20 for Munich. Land speculation is rife in Germany, and an undue amount of credit is given on mortgages at high prices. There are frequent changes of ownership, and many land agents. Town extension plans sometimes facilitate the operations of land speculators, and must for that reason be kept secret at first. The great blot on the system of town-extension plans is the lack of adequate compulsory powers of land purchase. Dear land causes the intensive use of land by erecting block dwellings, but the erection of such dwellings causes a systematic rise in the price of adjoining land, so they act and react on each other. A well-thought-out land policy is essential for all towns. Land purchase should be extensive—Frankfort, Mannheim, Hanover, Strassburg and Freiburg *i. Br.* own from one-third to one-half of the land in their precincts.

Municipal land may be utilized in one or all of the following ways: (a) Sold, with registered conditions, to prevent misuse or excessive speculation; (b) Built on by municipalities, as at Strassburg, Freiburg and Schweinfurt, where municipal dwellings are let; (c) Leased to individuals or companies, but preferably to societies of public utility. Three things should be combined in the process of town development: (a) Municipal land purchase of large areas; (b) A general plan, providing for main roads and transit facilities, careful grading of districts in zones, varied streets and open spaces, reservation of front gardens for future widening of streets if necessary; (c) Building by-laws varied according to zones, and providing for restrictions on intensive use of land, cheaper streets in suburbs and purely residential quarters, making of suitable regulations for small houses as to thickness of walls, height of rooms and other details of construction. In Baden, Hamburg and Frankfort, plots belonging to different owners can be pooled and re-apportioned after making the town plan.

Local railways and tramways should be constructed to develop the spread of population, as well as to serve districts already populated.

Reform of taxation on land is needed to prevent speculation and excessive prices made by "rings." A mere tax on land values might not suffice to permanently check excessive prices for land. A State tax on change of ownership is almost universally levied, according to a percentage of the value. It would be better to develop this (tax on changing hands) into a tax on unearned increment, as has been done in Frankfort, Cologne, Gelsenkirchen, Essen, Freiburg and Saxony, and is projected in Hesse. This tax regularly takes a percentage of the unearned increment from the seller, the height of the percentage being graded according to the length of ownership and the rise in value of the land. The proceeds of any tax on land values should be largely devoted to building and land purchase fund.

LABORATORY OF THE NEW YORK BOARD OF WATER SUPPLY

Physical Testing of Cement and Concrete by Tension and Compression—The Latter Adopted as Standard—Permeability—Tests of Aggregate—Chemical Laboratory—Soil Analyses

BY JAMES L. DAVIS

THE city of New York has no general municipal laboratory. The amount of engineering construction which the city has to carry on in its public works to keep pace with its industrial, commercial and residential growth is unequaled by any other city in America and probably in the world. The recent completion of twenty-two miles of subways and the building of many more miles of additional lines now being undertaken, the steady extension of its hundreds of miles of sewers and distribution mains for water, its street improvements and extensions, the development of its water-front facilities, its requirements in school, hospital and other public buildings, the development of the Croton Water Systems by construction of two large reservoirs now under contract, and studies undertaken for the filtration of the Croton water, its parks, its bridges to span the East River, and its latest and largest enterprise—the construction of works for bringing an additional supply of over 500,000,000 gallons of water daily from the Catskill Mountains and the development of the water resources of Long Island, call for

the expenditure of many millions of dollars annually and the employment of a large force of technically trained employees. At the present time the engineering employees of the city, including and above the grade of rodman, number probably not less than twelve hundred.

The investigation of the numerous physical, chemical and biological problems, and the testing and inspection of the materials required for construction is generally controlled by the board, commission or department having in charge a particular work or class of work, and each has its own more or less completely-equipped laboratory. No general municipal building providing executive and engineering offices exists, the various offices being located in numerous buildings widely separated. The writer recalls ten entirely separate laboratories, physical, chemical or biological, maintained by different departments in various parts of the city, several of them extensive in equipment and maintaining a high standard of efficiency.

To the writer was assigned in 1906 the study of the necessary organization and equipment of a laboratory for



FIG. 1. GENERAL VIEW OF PHYSICAL LABORATORY

the investigation of the physical and chemical problems arising in connection with the construction of the works which the Board of Water Supply is undertaking, including the testing of cements and other materials of construction to be furnished by contractors, and the collection and examination of the numerous aggregates which will be used in the very extensive concrete construction which will be required. The laboratory is located in a leased section of a manufacturing building which occupies an entire block, the laboratory occupying two floors and basement about 20x72 feet in size. The basement is used for concrete mixing and permeability tests, rock crushing, storage of cement and concrete test specimens, and general storage. The street floor is occupied by the general physical laboratory and office, the second floor by the chemical laboratory and the photographic studio.

PHYSICAL LABORATORY

The equipment of the physical laboratory at the present time is chiefly as follows: Seven dozen 3-gang and single cement moulds, A.S.C.E. pattern; twenty-two 3-gang 2-inch cube moulds; 100 and 200-mesh sieves for fineness tests; a Fairbanks-Harvard trip scale; Vicat needle apparatus; copper boiler for acceleration tests; a glass-top mixing table of convenient size for two workers; two damp-closets of Alberene stone; racks for holding the specimens during immersion, and storage tanks

made of white pine; a Fairbanks 1,000-pound shot machine, and a Riehle electrically operated 2,000-pound machine for tensile tests. A 500,000-pound hydraulic compression machine, operated by a three-plunger pump working through an intensifier, will be installed soon. This machine is intended chiefly for testing large concrete specimens and is adapted to specimens up to 12 inches in diameter and 40 inches in length. It is being built by John Robertson & Co., of Brooklyn. For general tensile, transverse and compressive testing there is a 100,000-pound automatic, screw dial, screw power, Riehle machine.

Tests of Concrete.—Compressive tests have been adopted as the standard tests for concrete. The test specimens have been chiefly cylindrical in shape, 6 inches in diameter and 12 inches in height, the capacity of the testing machine limiting the specimens to this diameter. Cylindrical specimens 8 inches in diameter and 16 inches high will generally be used in future for compressive tests. Studies will also be made with specimens of other diameters and lengths for comparative results.

A successful design of mould for compressive test specimens is shown in Fig. 3. This design is a modification of the sheet metal mould used by several other laboratories, in being made from a section of extra heavy wrought iron water pipe split along one side and bored to the required diameter.



FIG. 2. GENERAL VIEW OF CHEMICAL LABORATORY

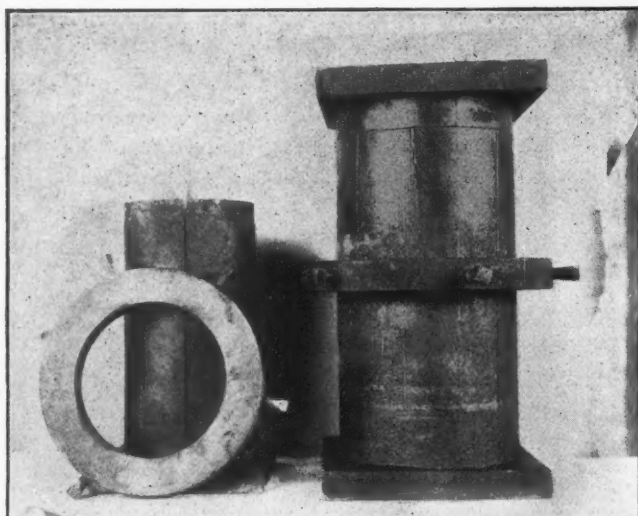


FIG. 3. MOULDS FOR COMPRESSIVE SPECIMENS OF CONCRETE

For beam testing there is a Riehle hand-operated machine taking specimens 8x8 inches in cross section and 8 feet long, of 10,000 pounds center load capacity.

For permeability tests, three types of apparatus are in use. For small specimens and moderate heads, that shown in Fig. 4 is used. The tanks are filled with water and pressure equivalent to the required head produced by the air-pump shown at the left. This apparatus shown in duplicate is designed for 150 pounds working pressure. For long-time tests, a simple device for utilizing the regular street service is shown in Fig. 5, with three specimens attached. The connection with the service is made by screwing the hose to an ordinary faucet. For larger

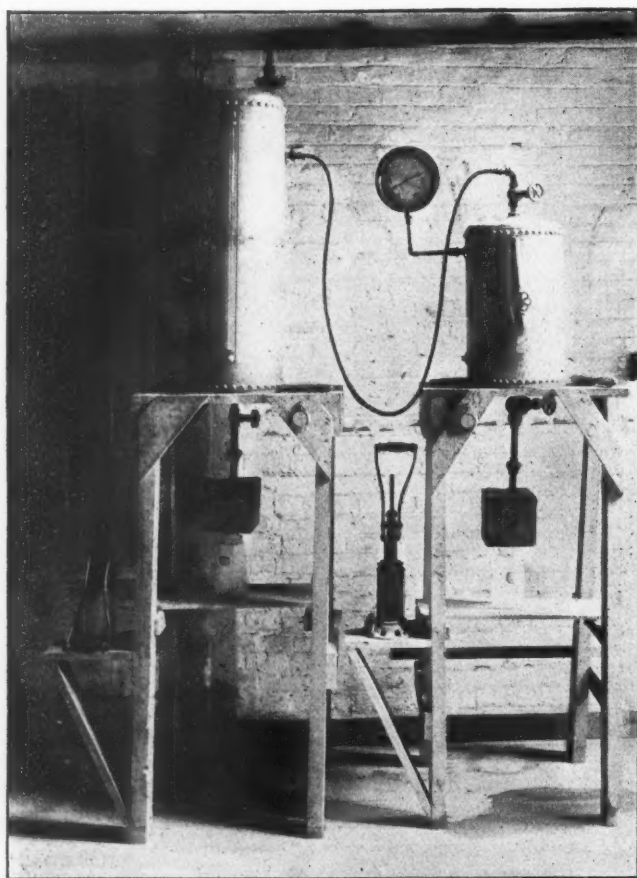
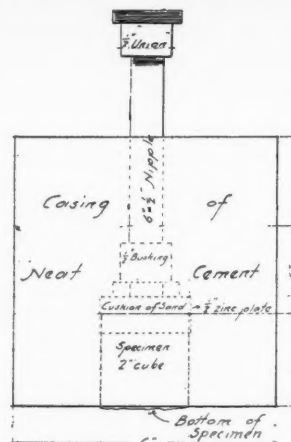


FIG. 4. APPARATUS FOR PERMEABILITY TESTS



METHOD OF ENCLOSING 2-INCH MORTAR SPECIMENS FOR PERMEABILITY TESTS. CUSHION OF SAND COMPOSED OF SAND, PASSING NO. 16 AND RETAINED ON NO. 30 SIEVE, WASHED AND DRIED.

Mechanical analyses are made by means of a Little Falls Analyzer operating a set of twenty-two sieves 8 inches in diameter and of mesh corresponding to the set used for the larger quantities. For coarse aggregate 1,000-gram, and for fine sands 100-gram, samples are taken for analysis. The material is sifted through all the sieves at a single operation. It has been found 250 turns

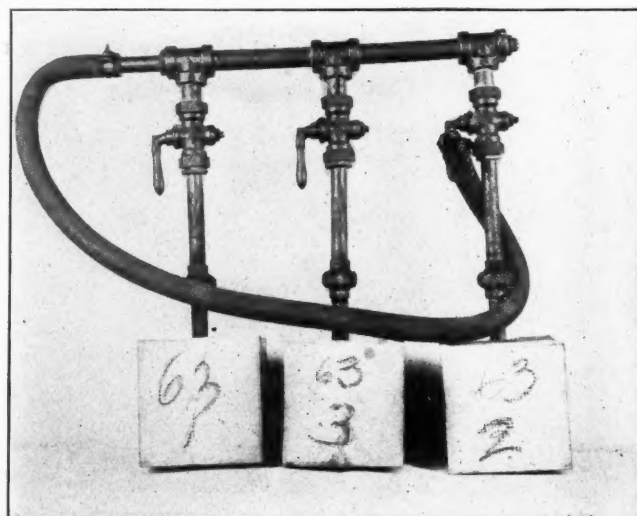


FIG. 5. PERMEABILITY APPARATUS FOR SERVICE CONNECTION

of the handle, producing 1,500 vibrations, at the rate of 60 turns per minute, are usually sufficient to give thorough sieving.

Tests of aggregates for concrete are made as follows: Every aggregate, whether a sand, a gravel or a crushed rock, is given a mechanical analysis, mineralogical examination and density or yield tests in mortar or concrete.

Concrete and mortar for test specimens are mixed in a sheet-iron bottomed box, 6 feet by 8 feet in size, and in small lots in sheet iron pans 24 inches square. The proportions are weighed on a Fairbanks silk scale of 400 pounds capacity. The scale has agate bearings and the beam is decimally divided to .01-pound. It is probable the scale is not accurate to .01-pound, but the error should not exceed .02-pound.

specimens and higher pressures, a hydraulic pump with accumulator is used, the pressure being recorded by a gauge.

Tests of Aggregate.—A 4-inch by 8-inch roll jaw crusher, having a range of adjustment from about $\frac{1}{4}$ inch to $1\frac{3}{4}$ inches, and a small balanced crushing roll provide for the reduction of any rock to aggregate of commercial sizes and down to the finest sand.

A set of twenty-two sieves about 20 inches square is used for separating the gravel and crushed rock to any required sizes.

All sands or other fine aggregates are dried before analyzing on an ordinary kitchen gas range.

Several smaller scales are provided for use in mechanical analysis, cement tests, etc.

A 5-h.p. electric motor supplies the laboratory with power.

CHEMICAL LABORATORY

The chemical laboratory is equipped for general analytical work and affords working facilities for two chemists. The sanitary qualities of the waters from the different sources of supply were thoroughly studied by the Commission on Additional Water Supply in 1903, and few bacteriological studies have as yet been undertaken by the present board.

Much of the time of the chemists has been given to the studies of the influence of the soil found on the different reservoir sites on impounded waters, with a view to determining to what extent soil "stripping" from the areas to be submerged will be necessary. About 1,600 soil and water analyses have been made the past year. Analyses of cements, paints, metals, waterproofing and other structural materials are carried on in connection with the tests of the physical laboratory.

The chemical work to date has involved not only ordinary analyses, but several investigations of specific problems, such as the corrosion of iron and steel and waterproofing processes for concrete.

WORK OF PHYSICAL LABORATORY

As examples of the workings of the physical laboratory, the following schedule of strength tests on cement and waterproofing materials and sands for mortar and concrete is given:

OUTLINE OF CEMENT TESTS, TENSILE AND COMPRESSIVE

Type of Test—		DURATION OF TESTS AND NUMBER OF SPECIMENS.																	
		24H	7D	28D	3M	6M	1Y	2Y	3Y	4Y	5Y	6Y	7Y	8Y	9Y	10Y	Total.		
Acceptance	Neat	3	3	3	..	..	..	..	..	..	..	..	..	..	..	..	— 9	Routine acceptance of cement. Made for each sample.
Acceptance	Mortar .....	..	3	3	..	..	..	..	..	..	..	..	..	..	..	..	— 6	
																	15		
Ten-Year	Neat .....	..	..	3	3	3	3	3	3	3	3	3	3	3	3	3	— 39	Made from sample average only.
Ten-Year	Mortar .....	..	..	3	3	3	3	3	3	3	3	3	3	3	3	3	— 39	
																	78		
Same, with compressive (2-inch cubes), omit 7Y and 9Y.....																	66		
One-Year	Neat	6	6	6	6	6	6	..	..	..	..	..	..	..	..	..	— 36	Ordinary investigation of new cements, sands, waterproofing, etc.
One-Year	Mortar .....	..	6	6	6	6	6	..	..	..	..	..	..	..	..	..	— 30	
																	66		
Same, with compressive (2-inch cubes), 3 to a test, omit 24H.....																	38		
Three-Year	Neat	6	6	6	6	6	6	6	6	..	..	..	..	..	..	..	— 48	Special investigation of new cements, sands, waterproofing, etc.
Three-Year	Mortar .....	..	6	6	6	6	6	6	6	..	..	..	..	..	..	..	— 42	
																	90		
Same, with compressive (2-inch cubes), 3 to a test, omit 24H																	42		
Three-Months	Neat	6	6	6	6	..	..	..	..	..	..	..	..	..	..	..	— 24	Preliminary on sands, waterproofing, etc.
Three-Months	Mortar .....	..	6	6	6	..	..	..	..	..	..	..	..	..	..	..	— 18	
																	42		
Same, with compressive (2-inch cubes), 3 to a test, omit 24H																	18		

SPECIAL TESTS: Example, see outline of Tests of Natural and Improved Cements, dated February 19, 1907.

In general, Mortars 1:3 BY WEIGHT.

PUZZOLAN, Sand, Improved and Natural Cements, Mortar 1:3 and 1:2.

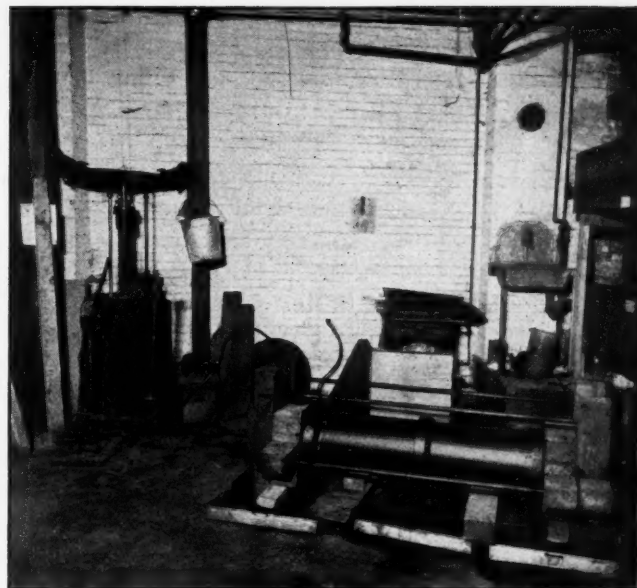


FIG. 6. TESTING VITRIFIED PIPE BY HYDROSTATIC PRESSURE. SPECIMEN TESTED TO DESTRUCTION. TANKS FOR STORING CEMENT SPECIMENS AT RIGHT

The Board's standard specifications for cement now in force accept on fineness, soundness, setting time, specific gravity, chemical analyses and tensile strength at 24 hours, 7 and 28 days' age, with conditional acceptance at the end of the 7-day tests. Tests will usually be made on samples taken at the mills by the Board's inspectors, ten samples to a bin, each sample tested separately. For corroborative tests, the sample average, a mixture of the ten samples, will frequently be carried to five or more years' age in both tension and compression.

It is expected the scope and equipment of the laboratory will of necessity extend with the development of the work of this Board now undertaking its first important construction, the aim being to provide facilities for the inspection and control of all materials of construction purchased by the Board or furnished by contractors, as well as for the investigation of the numerous physical and chemical problems which may arise in connection with the design and execution of the works.

In the establishment of this laboratory, as in other lines of organization, the Board of Water Supply has shown a broad comprehension of the task committed to it, and of the necessity for taking advantage of the best modern methods.

The Commissioners of the Board of Water Supply are Messrs. J. Edward Simmons, Charles N. Chadwick and Charles A. Shaw. Mr. J. Waldo Smith is Chief Engineer. Mr. Alfred D. Flinn is Department Engineer, Headquarters Department, under which the Inspection Division is placed. Mr. Ernst F. Jonson, Engineer Inspector, is in charge of the Inspection Division, of which this laboratory is a part. Mr. Richard H. Gaines is Chemist. The writer is Assistant Engineer in general charge of the laboratory and field work connected therewith.

Back Filling Trenches

CONCERNING the difficult problem, which was briefly discussed in an editorial in our July 31st. number, Mr. Jens Jensen, General Superintendent of the West Chicago Park Commission, writes us enclosing a copy of the permits for excavating in the parks under his supervision. The conditions under which these permits are granted, which were prepared by Mr. Jensen, contain some unusual features and are given in full as offering suggestions for the control of this class of work.

CONDITIONS

All material excavated from any trench under paved roadways must be removed from the boulevard; said trench being refilled with clean cinders, sand, gravel, or crushed stone, placed in layers not exceeding six inches in depth, thoroughly compacted with heavy hand rammers, using the necessary amount of water to complete perfect consolidation of the back filling.

The Park Commissioners shall have the right to do all back filling of trenches, taking up and replacing pavements, sod, stone flags, gutters, trees, curb, etc., or any other part of the work which they may think advisable, the expense of which will be deducted from the deposit, and shall have the authority, in case the permit is for water or gas pipes, to direct whether they shall be placed by opening trenches, tunneling or boring. Should the permit be for occupying part of the street with building materials, at least one foot of the gutter shall be left open, and the walk must be kept unobstructed, if practicable, otherwise a good plank walk must be laid around the material in the driveway. Proper barricades and, during nights, red lamps, must be maintained at any obstruction or dangerous places. All work shall be done, and the occupancy of park territory occur, at such times as the Park Commissioners may direct. The Park Commissioners reserve the right to revoke this permit without notice, for violation of any of the above conditions, or if they should find that more damage was being done to public property, or its use more greatly interfered with in the carrying out of the permit than was at first anticipated. The grantee will be held responsible for any damage to person or property resulting from the issuance of this permit.

Appended to this is a state of charges (the rates being left blank to be filled in as required) covering labor, teaming, pavers, stone setters, sodding, gravel, granite, crushed stone, black soil and paving.

Typhoid Communication by Contact

DURING the last few weeks an excellent opportunity has been offered for the study of the communication of typhoid fever by mediums other than milk and water, by the occurrence of mild epidemics of this disease in two hospitals where conditions would appear to be most favorable for studying all their features, and in both of which epidemics no suspicion attached to the milk and water supply. In the case of a New York hospital, it is reported that street dust is thought to have introduced the germs into the kitchen, which was below the sidewalk level, although this seems to us extremely doubtful. In the State Hospital at Trenton, N. J., an inmate was admitted on February 6, who was found on April 8 to be suffering from typhoid. The room-mate of this patient contracted the disease, as did also numerous other inmates in the same wing, and up to August 13 eighty cases had appeared and sixteen deaths occurred, all located in the main building, although more than 400 inmates of the institution are cared for in a separate building, known as the Annex. Twenty-three employees and other residents of this building other than patients contracted the disease. The matter has been investigated by Mr. Henry Mitchell, Secretary of the State Board of Health, and was reported upon by him a few days ago. Investigations concerning the food supply, including milk and water, were negative, except that colon bacilli were found in the water of a spring which furnished a portion of the hospital's supply, but further investigation showed it to be improbable that the spring water had any influence whatever in conveying the infection, and it was concluded that the disease was transmitted directly from patient to patient through the agency of utensils and food infected within the building. The investigation brought to light conditions which cannot be considered creditable to the hospital. There was no isolation of typhoid patients during convalescence; the spoons, forks, cups, etc., used in the dining rooms were washed by insane inmates without boiling, and it is believed that every utensil in the building probably became infected during the course of the epidemic, this being rendered the more probable because of the filthy habits of many of the insane inmates. The removal of suspicion from the spring water was largely due to the fact that the same water was used in the Annex, where not a single case occurred, while in the main building the disease appeared to finally subside only when all susceptible persons had suffered an attack thereof. This apparently clear case of communication because of carelessness in observing proper sanitary precautions, is but another added to the several which we have referred to recently which call attention to the fact that water and milk supplies should not invariably be blamed for typhoid epidemics, and that while filtration of water is probably the most important single step to be taken for avoiding typhoid epidemics, its adoption should not be considered to relieve the health authorities from all future diligence in maintaining sanitary conditions throughout the city.

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

Roads and Pavements

DALLAS, TEX.—A party of property owners from Fort Worth, consisting of Frank Mullin, B. F. Wallis, A. J. Campau, F. F. Ormsby, Fred Haberzettle, Jacob Hierholzer, Thomas F. Loughrey, C. C. McMichall, Fred Repper, A. Brandt, R. L. Dewes, and McCampbell, B. C. Barton, James Pinto and James Brown, accompanied by R. F. Cook and William Orr, attorneys for Texas Bitulithic Company, and F. V. Lanham, general agent, recently visited Dallas to investigate the pavements laid there by the Texas Bitulithic Company. The party, whose holdings are on Front street, had petitioned the Fort Worth Commission to have that street (which is over a mile long) paved with vitrified brick, but after examining the bitulithic work in Dallas they have drawn a resolution asking that bitulithic be substituted for the brick.

EL PASO, TEX.—It is believed that this city will soon have more miles of paved streets in comparison to the total area than any city in Texas. The citizens are taking a great interest in the subject, and other towns in the Southwest are also availing themselves of every opportunity to have paving laid and other street improvements made. Santa Fe, however, complains that under the present administration little has been done in putting down sidewalks and paving streets, both of which are much needed in that city.

FORT WORTH, TEX.—Commissioner Sam Davidson, of the City Streets Department, is negotiating with several rock quarries with a view to securing rock for paving at rates lower than what he is now paying. The city now pays \$1.27 per cubic yard for its crushed rock. This comes from the quarries around Jacksboro and is known as Jacksboro rock. On several contracts as high as \$1.50 per cubic foot has been paid. A new quarry is now being opened up near Brownsville and several others over the State are contemplated. Mr. Davidson believes he will be able to base future contracts made by the city on a lower rate than that now obtaining.

HAMILTON, O.—Mayor Will F. Thomas is organizing a movement having as its object the protection of the paved streets of the city. The Mayor has written to the authorities of Cincinnati, asking for a copy of the ordinance in force in that city governing such matters. It is alleged that many of the local paved streets have been more or less damaged by dirt and other material escaping from badly constructed wagons, and it is proposed to fine the drivers of such conveyances. It is for the purpose of protecting the streets now paved, and to provide for those yet to be paved, that the Board of Public Service and Mayor Thomas have become interested in the ordinance in force in Cincinnati.

PORTLAND, ORE.—Mayor Lane states that Portland is putting poor material on the streets, for which the property owners are paying a big price, and that the crushed rock is unfit for use and should be barred. He also deplores the fact that the city does not own and operate its own rock quarries, and says the city should own and operate its own rock crushers, and should build a dredge for the purpose of obtaining sand and gravel and making the big fills in the lowlands. According to the contractors, hundreds of thousands of dollars in street improvements are delayed because material and men cannot be secured with which to do the work.

Sewerage and Sanitation

ALBANY, N. Y.—The recently amended State agricultural law provides for the prosecution of any householder or consumer of milk, cream or curd, who fails to clean properly the can or other receptacle in which the article was delivered. The law relates alike to all dealers and users in each city in the State, and every use, return, delivery or shipment of an unclean can will be deemed a separate violation. H. H. Kracke, Assistant Commissioner of Agriculture, finds that a large percentage of bottles are returned uncleaned to dealers, who claim it is almost impossible to remove the old particles of milk after they have been permitted to stand for twenty-four hours. The result is that frequently fresh milk or cream is emptied into the bottles, which are sealed and come back to the city with the milk contaminated. Inspectors are empowered by the statute to seize cans or bottles and use them as evidence against offenders.

ALEXANDRIA, VA.—Mayor Paff proposes to take energetic measures to improve the sanitary condition of the city. He says many complaints have been made to him in regard to the unhealthful and unsightly state of a large number of alleys and vacant sections caused by the accumulation of weeds, as well as the deposit of waste. The Mayor says that the city has been for some time without the services of a regularly organized Board of Health, and urges the necessity of the appointment of a Sanitary Officer; he points out that the captain of the chain-gang would be in an excellent position to discharge such services at the minimum of expense.

BALTIMORE, MD.—Reports on file at the City Hall show that seven million germs have been found in one cubic centimeter—about 30 drops, or less than a teaspoonful—of milk recently captured by the city's milk inspectors. Practically all of the milk which the Health Department has found to contain great numbers of organisms has been contaminated in the handling of it. The Department proposes to conduct a campaign of education among dealers and dairymen looking to the more cleanly handling of milk. The use of preservatives in milk is a separate question, but the claim is made that if milk is handled in a cleanly and scientific manner, it will remain sweet so long that preservatives will not be needed. The bacteriological records of the Department show that it has already vastly improved the condition of the milk sold in the city.

CHARLOTTE, N. Y.—The Board of Trustees has authorized the Health Board to confer with the State Board of Health and secure action in regard to the running of sewage into the Genesee River by the city of Rochester. It is alleged that the contents of the sewers have been carried to the mouth at the lake, where, owing to the dead water, a portion of it has settled at the bottom, much to the annoyance of the people of Charlotte who live along the Genesee. Frank Pye, President of the village, states that, owing to the water backing up into the river from the lake, the sewage is not carried out into the lake, but remains in the river, a menace to the health of the people of the village, and that the propellers of boats churn the water and stir up the sewage to such an extent that the people are nauseated by the odor.

CHICAGO, ILL.—Dr. W. A. Evans, Health Commissioner, has announced that in future tuberculin will be issued free to physicians, and if necessary the diagnosis

of the disease will be made by physicians from the Health Department. Commissioner Evans declares that 90 per cent. of the cases of tuberculosis are curable if the disease is discovered in time, and that early diagnosis of all suspicious cases would reduce the death rate from this malady to a minimum. Dr. Evans states that the facilities in Chicago for treating consumption are inadequate, and that, while over ten thousand cases exist in the city annually, the hospital at Dunning can care for only two hundred and fifty.

DALLAS, TEX.—Mayor S. J. Hay, upon recommendation of the Board of Health, has instructed the sanitary police officers to be alert in discovering unsanitary conditions, and to be rigid in the enforcement of the law, and Chief of Police Ben F. Brandenburg has instructed members of the regular police force to make daily reports of sanitary conditions on their beats. The Mayor says that the city officials propose to compel a faithful obedience to the sanitary regulations. Every day, he said, should be a cleaning-up day. The sweeping of trash into the curbs, the throwing of refuse into alleys, and the careless indulgence given to weeds, are common forms of violation, and these are covered by penalties, but it is desired to find nuisances not covered by existing ordinances, in order that the laws may be enacted to cover the same.

PULASKI, N. Y.—Many complaints have been made in regard to the smoke and soot from the chimneys and smokestacks in the village, where a large number of factories use soft coal fuel. Residents are urging manufacturers to co-operate with them to abate the nuisance, and the management of the Brayton-Salisbury factory will be asked to so construct their new boiler room and smokestacks as to obviate the smoke nuisance. Attention of the village authorities will also be called to the importance of providing a public dumping ground for rubbish, much of which is burned in the rear of stores and residences, which not only endangers buildings, but smudge and offensive odors arise from the burning rubbish.

SOUTH BEND, IND.—City Sealer John T. Willett has been investigating the meat markets and groceries under the pure food act, and has unearthed some very startling conditions. Arrests have been made of merchants who have sold contaminated meat; in one instance a barrel of corned beef was examined and a number of dead rats was found; from one market four wagon loads of unwholesome food were taken to the crematory and destroyed. In many shops were found preservatives such as "freeze-em" and "preserverine" used in embalming meats.

CALDWELL, N. Y.—Attorney-General Jackson has notified State Health Commissioner Eugene H. Porter that he has no authority to prosecute the Lake George Navigation Company for permitting the discharge of pollution into the lake from its passenger boats on Lake George. Under the navigation laws the penalties for such violations go to the towns, and the Attorney-General advises that the State Health Department communicate with the various towns bordering on Lake George, for whose benefit the penalties are imposed and whose officers are empowered to bring the necessary suits.

TRENTON, N. J.—The Sewerage Commission of the State, with a view to avoiding the pollution of the Atlantic Ocean, has decided to have the municipalities along the coast remove their sewer extension in the ocean or bays, and install plants for the disposal of sewage. The different municipalities must have plans prepared and submitted to the State Sewerage Commission for approval. An engineer will then be sent without any expense to the boroughs in order to see what kind of a plant would be most suitable and to make other sugges-

tions. The Commission will endeavor to work in conjunction with the various municipalities for the best interests of the State.

YORK, PA.—In order to satisfy property owners who doubt the efficiency of the sewerage system being built by Hering and Fuller, and to influence public opinion in view of a coming election for bonds to pay for further work, an inspection of the system by a committee of citizens was arranged by Resident Engineer J. K. Gilsey. The committee was easily satisfied that, in spite of the fact complained of that the sewers were four feet below the ground in some places and twenty feet in others, they would still carry off water. Descent was made at a number of manholes by members of the committee, who were shown lights flashed through the pipes from other manholes, showing that the sewers were straight and clear. The operation of the automatic 20-gallon flush tanks was demonstrated and found in good working order. In one place only were defects found—there many lengths of 27-inch pipe were found to be mysteriously broken. The most probable explanation for this is that the pipe rested on a stratum of rock that was jarred by some heavy blast.

Water Works

BROOKLYN, N. Y.—Deputy Water Commissioner Crozier declares that large quantities of water are wasted by contractors who are working on the streets of the borough. He has accordingly appointed an inspector, to be paid by the contractor, to have charge of the hydrants and prevent waste, which the Commissioner says amounts to twice the amount used. In the case of small contracts, where it would be an injustice to add the expense of an inspector to each job, one inspector will have charge over several contracts.

DALLAS, TEX.—The main supply pipe leading from the pumping station at Turtle Creek burst recently, and for nearly twenty-four hours the people of Dallas were absolutely without public water for either fire protection or other purposes. The damage occurred at the point a few yards south of the plant, where the big mains branch out and start on their underground way to the city. The accident was immediately discovered and efforts were made to repair it without shutting off the entire supply; the hole, however, increased in size, and the volume of escaping water grew larger, and the machinery was stopped for the first time in years, necessitating cutting off the entire water supply of the city. Secretary and Collector Nelms, of the Water Works Department, took charge of the situation and put his best men at work, and all of them spent all night in the mud and water around the injured pipe before it was repaired.

HAZLETON, PA.—Council has adopted a resolution directing the Mayor to notify the President of the Hazleton Water Company that the water supply in the southeastern section of the city is deficient in quantity, both for local consumption and fire protection; that the company be required to proceed at once to remedy the insufficiency; that two weeks be allowed the company to give definite assurances to the city that it will proceed to remedy the evil, and that the company be notified that if within the time limited no such assurances are made to the city, then the city will file a bill in equity to compel the corporation to correct the evil complained of.

MOBILE, ALA.—The City Water Works Department, by the purchase of the Bienville plant a year ago, has acquired sufficient capacity to provide for an increase of one-third more than the present population. It now supplies water to 10,383 houses, an increase of 228 since last March, in addition to 63 elevators, 914 fire hydrants and 47 private fire hydrants. The net gain to the city from the Department during the year was \$8,207.90 on

a total revenue of \$80,546. Over 9,500 feet of service mains have been laid and extensions to Oakdale and Toulminville are planned. The Department is making an inspection of the plumbing and water fixtures to obtain information as to connections, size of houses, and number of occupants, as well as locate bad plumbing and other sources of leaks, which have heretofore increased the cost of maintenance.

READING, PA.—In reply to a letter from the Reading Taxpayers' League, inquiring about rates charged for water supplied to private companies that serve neighboring towns which are likely to be annexed to the city, the Water Commissioners state that the rate is 25 cents per hundred cubic feet, or 3 cents per 1,000 gallons, during the first ten years of the contract and an advance of 25 per cent. during each succeeding period of ten years. The minimum meter rate for Reading consumers is 2.2 cents per cubic foot, the average rate being 4.78. The cost of the Maiden creek water supplied has been in the past 1.8 per 1,000 gallons. The possibility of having to filter this water in the course of ten years, at a cost of \$3.50 per 1,000,000 gallons, is provided for by the 10 per cent. increase in the contract price.

TACOMA, WASH.—Citizens, as well as Councilmen, believe that the South Tacoma wells recently completed should be given a fair trial before taking up the project of a gravity system from the Green river. The estimated cost of installing the new system is \$2,000,000, interest on which, it is said, would be \$100,000 annually. The total cost of the wells, including the motor and pipe line to carry the water to the reservoir, was something over \$30,000, or about one-third the annual interest on the \$2,000,000 bonds, and for this sum Tacoma obtained a supply which, during the hot months, it is alleged, proved adequate and which may be enlarged at comparatively small cost. Council will endeavor to have the amount of water available from the wells accurately measured, and the cost of their operation and maintenance ascertained before the voters are asked to decide between the two systems.

Street Lighting

GRAND RAPIDS, MICH.—Council has received a communication from General Manager Freshney, of the Board of Public Works, asking for an appropriation of \$3,000 for removing the 250 lamps now in the city that are suspended on short mast arms and placing them on long mast arms that will bring the lights out into the center of the streets, and get them away from the shadows of the shade trees. As the Board, owing to lack of funds, cannot accede to the requests for more lights, it proposes to make what improvement it can in those now in use.

PASADENA, CAL.—The monthly report of Manager Glass for August shows that the city's lighting plant was in operation on the commercial circuit 357 hours and 25 minutes, an average of 11.53 hours per day, and that there were connected up and in regular service 302 arc lights and 103 32-candlepower incandescent lamps for street lighting, with public buildings connected for incandescent lights, making a total installation equivalent to 300 16-candlepower lamps. The total operating and fixed charges on the amount of light delivered to the municipality for the month was \$1,105.03. For the amount of light used by the city during the month the city would have paid at former rates, \$2,080. The municipal lighting department, therefore, made a net saving to the taxpayers on its second month's work, of \$974.97.

SALT LAKE CITY, UTAH.—In exchange for the validation, and extension of fifty years, of its 1905 franchise, the Utah Light and Railway Company will relinquish all its restrictions of the city's use of Big Cottonwood Creek for power purposes only in connection with municipal utilities and properties, and allow the city to use the power for

whatever purpose it wishes. Protest was made when the restriction clause was inserted in the franchise, the claim being made that it effectually barred the city from ever producing electric energy for street lighting or other important uses, and the point is now before the courts in a suit brought by Thomas Homer. If the new franchise is passed it will validate the 1905 franchise and cause for complaint will cease.

SYRACUSE, N. Y.—The Syracuse Lighting Commission, appointed by Mayor Alan C. Fobes in January last under the authority of the Common Council, to investigate the lighting situation as affecting the city and the consumers of gas and electricity, has made its final report. While advising against city ownership at the present time because, in its judgment, conditions are not now favorable in Syracuse for acquiring and operating a municipal plant for either private or public use, the Commission recommends that steps be taken to secure authority for lighting streets, parks, and public buildings, the authority to be exercised only after the proposition has been submitted to popular vote and approved by a majority of the voters.

Fire and Police

AUSTIN, TEX.—The new fire escape law is now in force, and provides that every hotel or place where sleeping accommodations are furnished the public must provide two fire escapes at opposite sides of the building, of steel construction on buildings more than two stories in height or where the floors are over twenty feet from the ground. Signs must also be placed in every room, in the office, and in the corridors of the hotel, pointing out the way to the fire escapes, and in buildings having rooms less than twenty feet from the ground the rooms shall be provided with a coil of manila or hemp rope at least five-eighths of an inch in thickness. The penalty for failure to comply with the ordinance is a fine of \$25 to \$200 each for every day buildings are not so equipped.

DAVENPORT, IA.—The Police Commission proposes to ask the Council to appropriate additional funds for next year in order to provide for twelve more policemen in the city. The Commission asserts that Davenport has fewer patrolmen for its number of inhabitants than any other city in the State, the cities in Iowa all being policed on the basis of one officer for every thousand persons. In Davenport, however, there is only one officer for every two thousand inhabitants, there being but thirty-six men on the force. After deducting twelve men who are on special service, but twenty-four are left on duty in a city of 48,000 population, and the Commission calls attention to the area to be covered.

LOUISVILLE, KY.—The report of the Louisville Fire Department for the fiscal year ending August 31 shows that 1,052 alarms were responded to, consuming 827 hours and 20 minutes of actual work on the part of the firemen. The report on loss and the insurance, with August omitted, shows the loss was \$534,245.94 on buildings, the total insurance on which was \$3,095,299. The casualty list shows that four deaths occurred in the Department during the year. Eight persons met death in flames, three were killed at fires, and eleven were rescued by the firemen. Forty-six firemen were injured, seventeen men, fifteen women and four children were burned and twenty-four citizens were injured at fires.

NEW YORK, N. Y.—Fourth Deputy Police Commissioner Woods has been observing the work done by police dogs in several cities in Europe, and heartily indorses the plan of adding to New York's Police Department a force of bloodhounds, to be used in tracking fugitive criminals in outlying districts. If the experiment now being tried with the dogs in one of the smaller cities in New York State continues to be as successful as it has thus far, it is expected that police dogs will be placed in service in New York City within a few months.

Government and Finance

BOSTON, MASS.—M. J. Sughrue, Attorney for the Finance Commission and former District Attorney, has had samples of the coal taken from that used by the city at the Sewer Pumping Stations, the School Department, and from four contracts now in force, submitted to Henry J. Williams, a chemical engineer. Mr. Williams has testified that only one of these samples was of good quality, and the following table shows what New River and Georges coal of the best quality, the kind paid for by the city, should contain, but that all the samples examined had too high a percentage of ashes and sulphur and too low a percentage of volatile matter and heat units:

	What Best Coal Should Show			
	ASH.	SUL- PHUR.	VOLA- TILITY.	HEAT POWER.
New River coal.....	4.84	0.77	22.00	14,748
Georges Creek	6.50	0.81	18.50	14,511

Samples of City Coal Tested

No. 1, sewer pumping station.....	15.48	1.76	18.00	13,081
No. 2, sewer pumping station.....	12.73	2.7	22.24	13,531
No. 3, English High School.....	11.32	0.94	16.72	13,680
No. 4, West Roxbury High School.	8.95	3.16	19.91	13,443
No. 5, South Boston High School..	6.65	1.01	21.57	13,943
No. 6, East Boston High School...	9.36	1.70	23.81	13,956
No. 7, East Boston Ferry Slip.....	11.11	2.13	17.15	13,956
No. 8, Long Island Hospital.....	9.78	1.27	17.68	13,850
No. 9, Deer Island.....	10.98	2.25	18.78	13,389
No. 10, Deer Island.....	9.05	1.32	22.38	14,017

NEW YORK, N. Y.—The \$40,000,000 sale of 4½ per cent. New York City bonds, which took place September 10 in the office of Comptroller Metz, was several times oversubscribed. There were 960 individual bids. This is three times the number ever before submitted at any letting. Prices bid by the large banking interest were low. The syndicate made up of J. P. Morgan & Co., National City Bank, First National Bank and Harvey Fisk & Sons bid 100.67 for \$35,000,000 of the bonds and 100.67 for the \$5,000,000 of stock. Kuhn, Loeb & Co. bid for about \$10,000,000 bonds at prices ranging from 100.25 to 103. The New York Life Insurance Company bid for \$2,500,000 at from 101 to 101½. The exact total of all bids received was \$205,800,080. The income earning basis of the stock, which runs for fifty years, is 4.39 per cent.; the short term issues net 4.46 per cent.

NEW BEDFORD, MASS.—Mayor Charles Ashley has informed the employees of the Street Department that it is necessary to reduce the force, owing to the failure of the Council to vote funds. There is less than \$15,000 in hand, which makes it impossible to clean the streets as thoroughly as they have been, and work on the new block pavements will have to be stopped. As long as it is possible, ashes will be collected, and if there is no more money the city will have to stop everything save that which is urgent and is necessary to the public health.

Refuse Collection and Disposal

GRAND RAPIDS, MICH.—A written opinion from City Attorney Taggart has been presented to the Board of Health in which he states that the hotels and restaurants which have heretofore been unwilling to give their garbage to the city collectors will be compelled to do so. Health Officer De Land has also submitted a report of the Garbage Collection Department from the time of its organization to August 1, in which he states that on January 27, 1907, the Department started collecting from 2,825 families, but as soon as it became known the municipality was collecting garbage free of cost to householders, the number by August 1 had increased to 8,600. Collection is made twice weekly from every section of the city and once a day from the restaurants in the business district. The financial report showed a balance on hand of \$2,056.40.

NORFOLK, VA.—Council has decided that Main, Granby and Church streets must be swept between 10 P.M. and 6 A.M., instead of between 6 P.M. and 10 P.M., as heretofore. It is alleged that as the streets are now crowded with visitors to the Exposition during the earlier hours of the evening, the sweeping of the streets at that time is both disagreeable and unsanitary.

OAKLAND, CAL.—The Garbage Committee has reported to the Board of Health that it has made a thorough investigation and finds the present system of dumping garbage in various sections of the city is creating unsanitary and dangerous hygienic conditions and the city is in great danger of an epidemic. The Committee recommends that the city purchase a modern incinerator of sufficient capacity and that the Board of Health be given supervision of it, as well as collection of the garbage, with power to make penalties for infraction of its orders. Immediate action is urged by the Committee, as present conditions are considered a serious menace to health.

PLAINFIELD, N. J.—Col. W. F. Morse, an advocate of incineration, and D. S. Gordon, representing a reduction process, recently addressed the Board of Trade. Mr. Gordon told how garbage separated from rubbish and ash might be made to yield money by reduction, the grease being sold to soapmakers and the solids, after drying, sold for fertilizer. He estimated that a reduction plant in Plainfield, where the garbage will average ten tons a day, would be self-sustaining. Col. Morse argued for a complete system of disposal, and said that incineration, which handled everything, was what a community needed. He estimated that a plant in Plainfield could burn all its garbage, furnish power for seventy-five electric lights and for pumping the sewage, and cost nothing for disposing of the waste substances.

Parks and City Beauty

ABERDEEN, WASH.—Mrs. James Stewart has offered to give the city forty or eighty acres of land near the present water works to be used as a park in honor of her late husband, one of the founders of the city, who died a year ago, if certain conditions are complied with. Her requirements are that the city shall begin at once to clear away the underbrush, protecting and preserving desirable trees and shrubs; shall expend in developing and improving the grounds at least \$1,000 a year for the next ten years; that it be kept for park purposes only, and shall be free to the public at all times, subject only to reasonable rules, and shall be named and be known for all time as the "James Stewart Memorial Park." Upon failure to maintain it as prescribed, or upon a change of name, it shall revert to her estate.

ALTON, ILL.—Mayor Beall has asked the General Manager of the East St. Louis and Suburban to give Rock Spring Park to the City of Alton as a public park, on condition that it be maintained as such and be kept in good condition. Information was given Mayor Beall by officials of the company that an offer of \$10,000 had been made for the park, and it was intended to use it for a beer garden. As the park is just outside the City of Alton, Mayor Beall says that so long as he is Mayor he will never allow the State law to be violated by the selling of beer there.

LOUISVILLE, KY.—The Civic League, at its own expense, in many instances, has succeeded in removing all signboards except one from McDowell Speedway, the merchants most cheerfully granting permission or effecting the removal themselves. The League hopes soon to have all signs on the fences painted out, the property owners having asked that the merchants be notified through the newspapers to paint no more signs there. The League has plans to make the roadsides as beautiful as at Bryn Mawr, but on account of lack of funds may

be able to plant only honeysuckle this fall, and it hopes the Park Commissioners will take sufficient interest in the work to carry it on.

ROCHESTER, N. Y.—Commissioner H. F. Atwood, Chairman of the Maplewood Park Committee, realizing how difficult it is for the Park Board to get money from the city for improvements such as he designs for the entrance to Maplewood Park, will try to raise the necessary amount by subscription, and has the assurance of many citizens that they will furnish a reasonable sum. Mr. Atwood estimates that it will require between \$6,000 and \$7,000.

WASHINGTON, D. C.—The determination of the North Capitol and Eckington Citizens' Association to award cash prizes for the best kept lawn and parking spaces in its territory, provided an incentive to a display of civic pride in the arrangement and maintenance of front gardens. A committee of newspaper men, acting as judges, recently unanimously decided that the first prize should go to Mr. Herman E. Blau, before whose residence at Rhode Island avenue and North Capitol street was a wealth of flowers and vines and a well-kept lawn, the whole surrounded by a green wall of California privet. In one corner of the lawn was a garden containing hydrangeas, August lilies, a large bush of crepe myrtle, variegated roses, and shrubbery. The second prize was awarded to Dr. Jesse B. Schaffhirt, 2332 First street, northwest, and the third prize to John F. Weyrich, 1825 Lincoln avenue, northeast. Other lawns and gardens attracted much attention, and a friendly rivalry exists between the gardener-members of Truck Company No. 4, on New York avenue, and Engine Company No. 12, on North Capitol street.

Rapid Transit

BLACKSTONE, MASS.—C. R. Day, Chairman of the Board of Selectmen, recently stopped all work upon the new tracks of the Woonsocket Street Railway Company in the town, by an ultimatum declaring that until the company would promise to provide better car service it could lay no more rails. The Town Solicitor, John F. Meaney, was instructed to see that the order was enforced. The trouble has arisen over what are declared to be the inadequate facilities for transferring passengers from the Worcester cars, where they stop at the upper end of the town, to Woonsocket. Small cars, not large enough to hold two-thirds of the passengers brought on the big Worcester cars, it is said, meet the latter, and the overcrowding has become so pronounced, and so many complaints have been made, that the Selectmen have taken action.

BELVIDERE, ILL.—Mayor Charles E. Pierce recently took decided steps to make the local electric railway company come to what he believed to be a compliance with the ordinance regulating the operation of the line in this city. For some time past Mayor Pierce has contended the roadbed of the company and the cars were dangerous and a menace to the public, declaring them unsafe, and he has had legal proceedings started to annul the franchise. To make the road inoperative, he ordered several of the rails disconnected and raised above the level. This forced the company to send its cars to the barn, and for the remainder of the day the line was tied up.

LOWELL, MASS.—The Board of Aldermen has received a petition from the Boston and Northern Street Railway Company for a franchise to operate trolley express and freight cars over its lines in this city. Mr. Fred N. Wier, representing the petitioners, said that a special car was now being run over the various lines every Sunday morning for the purpose of distributing newspapers, and that the running of freight cars would not endanger passenger service. As many complaints have been received of

the poor service given by the Railway Company, objection was raised to granting favorable privileges to any company or corporation by the city unless it guaranteed that the public be considered.

SCHENECTADY, N. Y.—The Board of Estimate and Apportionment has authorized Corporation Counsel Yates to place the matter of the reconstruction of the Villa Road culvert before the Public Service Commission at Albany. Mayor Clute says that the city has grown to such an extent since the culvert was built that the structure is no longer large enough to accommodate traffic. The Board of Estimate will request the Commission to order the New York Central Railroad Company to tear down the present culvert, which is but 28 feet in width, and put up a steel structure 70 feet wide. It is estimated that the rebuilding of the culvert will cost from \$35,000 to \$50,000. An ordinance has been passed for the paving of the roadway under the culvert, and if a wider structure is built the road will be properly drained and better service on the trolley lines made possible by granting the Schenectady Railway Company right to put down double tracks.

GENOA, ITALY.—Genoa and Milan are to be connected by a marvelous electric railroad eighty-five miles in length, which is to cost \$47,000,000. The excessive cost is owing to the nature of the country through which the line will pass. It will require nineteen tunnels, one of which will be twelve miles long. There will be 372 bridges and the road will be six years in the course of construction. The cost of the line construction alone will be \$500,000 per mile. The line will be double-tracked and there will be no grade crossings. Trains will consist of three cars, each accommodating fifty passengers. It is proposed to run twenty trains a day, and it is estimated that the daily traffic will be 6,000 passengers.

Miscellaneous

MEXICO, MEX.—The National Committee appointed by President Diaz to arrange for the celebration of the one hundredth anniversary of Mexico's independence, has adopted a unique feature as a part of the general plan for observing the patriotic event. It is proposed that public improvements shall be inaugurated on September 16, 1910, which is the date of the centennial independence anniversary, in more than nine hundred cities and towns of the republic. It is estimated that the average cost of public improvements will not be less than \$100,000. In the larger cities, where large public buildings or public service improvements are contemplated, the amount of money to be expended may run into the millions of dollars. If a general average of \$100,000 is expended in each of the nine hundred and more towns and cities, the total amount of money involved in the plan will be almost \$100,000,000.

NYACK, N. Y.—The Village Trustees have decided to furnish to Chief of Police Fury a copy of the local laws, in order that he may be informed as to the regulations and take measures to enforce the ordinances. Special attention is to be given to the erection of signs over sidewalks, and all are to be removed. Anyone who violates this ordinance is deemed guilty of disorderly conduct, and the penalty is ten dollars for each offense, and a further penalty of five dollars for each day such obstruction is allowed to remain.

PROVIDENCE, R. I.—An ordinance has been presented to the Board of Aldermen forbidding the introduction into or turning into the common sewers of the city of certain substances injurious and detrimental to said sewers and the public use thereof, including steam, gasoline or benzine, or other highly volatile or inflammable material, or hot water above 130 degrees. A penalty of \$20 is provided in the ordinance.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Municipal Interest

RIGHT TO ISSUE WATER WORKS BONDS

Selma Water Co. vs. City of Selma.—It is not requisite that a breach of covenant shall have been actually committed in order that an injunction may be issued; it being sufficient that defendant insists on its rights to perform the act in question, which, if done, will constitute a breach. Complainant acquired a franchise from defendant city for the exclusive right to maintain and operate water works in the city until July 12, 1915, the city reserving the right to purchase the works by paying an agreed or appraised value. Complainant alleged that in April, 1906, the city authorized the issuance of bonds to purchase or construct a water works plant, and that in November the city passed an ordinance directing that the Finance Committee of the Council and the Mayor take further proceedings for the purchase of the water plant, or "for building and equipping a water plant," whereupon the city notified complainant of its desire to purchase. Defendant in its answer admitted that complainant had an exclusive franchise to maintain water works in the city until July 12, 1915, and denied any intention to violate such franchise. It was held that the fact that the ordinances authorized the issuance of bonds for the purpose "of constructing," as well as purchasing, a water plant, did not show an intention on defendant's part to violate complainant's franchise, and was therefore insufficient to justify the issuance of an injunction.—U. S. Circuit Court, Alabama.

TAKING LAND FOR PARKS

Bohannon vs. City of Stamford.—The City Charter authorizes the City of Stamford to take land for park purposes, and provides that, after the report of the Board of Appropriation and Apportionment and the approval of the City Council, the City Clerk shall record the description, etc., with the name or names of the owners of the land to be taken and the damages awarded to each, which shall be paid at the end of thirty days' publication of notice. It was held that on the completion of such proceedings the city became absolutely indebted to the land-owners for the damages awarded, though the damages were not payable until after the thirty days had expired. Where a city charter did not prohibit the city from paying for lands taken for park purposes out of its general funds, the city's failure to issue bonds for the payment of damages for land taken for park purposes, as authorized by the Statutes, did not affect the right of the land-owner whose property was so taken to recover from the city the amount of the award for damages.—Supreme Court of Errors of Connecticut.

OBSTRUCTION OF SIDEWALK

Brooks vs. City of Atlanta.—The limited right of an abutting owner to obstruct a public highway by reason of his business exigencies must be reasonably exercised, and it is subservient to the right of the public to safe passage. An obstruction, although temporarily justified, if it be not removed in a reasonable time becomes a nuisance. The court erred in granting a nonsuit. Where a plaintiff relies for recovery upon several acts of wrong or negligence, proof of any one of them, if itself actionable, is sufficient to prevent nonsuit.—Court of Appeals of Georgia.

NATURE OF JURISDICTION

St. Louis vs. De Larsus.—That an ordinance of the City of St. Louis forbids the keeping open of meat-shops for the sale of meat therein after 9 o'clock in the forenoon on Sunday, whereas the Revised Statutes forbid the sale of goods, wares or merchandise at any time on Sunday, with certain exceptions; held not to create a repugnancy between them within the meaning of the Constitution. That an ordinance of the City of St. Louis forbidding the sale of meat after 9 o'clock on Sunday, provides that the fine for a violation thereof shall be not less than \$25 nor more than \$100, while the Revised Statutes, 1890, provide that the fine for a sale of goods, wares or merchandise on Sunday shall not be more than \$50, does not create any repugnancy between them.—Supreme Court of Missouri.

INJURY BY CONTRIBUTORY NEGLIGENCE

Bowen vs. Reynolds, City Treasurer, Central Falls.—A traveler, injured by a defect in a street, is not guilty of contributory negligence merely because riding on the left-hand side.—Supreme Court of Rhode Island.

CITY PROPERTY BEYOND CITY LIMITS

Town of Montezuma vs. Law.—In the absence of express authority, a municipal corporation cannot acquire property or perform any act beyond its territorial limits. Therefore, where an act of the Legislature authorized the City of Montezuma to build a bridge across Flint River, on a public road of the county outside of the corporate limits of the city, but did not impose upon the city the duty of maintaining the bridge, the city was not liable for any injury resulting, not from any defective construction of the bridge, but because of its unsafe condition for want of repair. A municipal corporation cannot be held liable for failure to perform a duty when the duty of performance has not been imposed upon it by law, and which it has no power to perform for lack of authority to raise revenue for that purpose.—Court of Appeals of Georgia.

LIABILITY FOR DEFECTIVE DRAINAGE

Mayrant vs. City of Columbia.—Where, in laying drainage pipes to carry off surface water, the construction by the city was so negligent that water ponded on the lot of a citizen by raising the street grade was not carried off, but collected thereon, rendering the premises sickly and uninhabitable, the city is liable for damages to the owner under Code, providing that any person who shall receive damages through a defect in any street by reason of mismanagement of anything under the control of the corporation through its negligence may recover the same.—Supreme Court of South Carolina.

PAYMENT OF COMPENSATION—PLEADING

Davidson vs. Village of White Plains.—Plaintiff sued on a claim against defendant village corporation for machinery furnished and labor performed in connection with its water supply plant. The laws of 1896 provide that defendant should pay its obligations incurred in connection with the construction and operation of its water supply plant from a particular fund, disbursed by a special department, and not raised by general tax, but by sale of bonds. It was held that since a particular mode of discharging the defendant's obligations in connection with its water supply plant is provided by statute, that mode must be first pursued, and the corporation can only be sued for a breach of its duty or contract to provide the fund in the manner prescribed by law; and hence, where plaintiff's complaint did not show that defendant was thus in default, it was properly dismissed.—Appellate Division, Supreme Court of New York.

CLOSING STREETS

People ex rel. Winthrop vs. Delaney, Corporation Counsel.—The Legislature may close streets in New York City and employ the agency of such municipal officials as it shall choose to bring about the closing, or to prescribe the mode of procedure to be adopted for the purpose.—Appellate Division, Supreme Court of New York.

REMOVAL OF BUILDINGS

Hinman vs. Clarke et al., Board of Works, Oswego.—In the absence of a general legislative restriction, by ordinance or otherwise, an owner of a building in a city has a common-law right to the reasonable use of the city streets for the purpose of moving such building from one location to another. Where, after the owner of certain buildings had obtained the consent of the Oswego Department of Works to the use of the streets for the removal of buildings, as required by a city ordinance, he proceeded to prepare other lots for the reception of the buildings and incurred expense in the furtherance of the undertaking, the city was not authorized to revoke the license so granted because of a protest of the owners of the property in the vicinity of the destination of such buildings, for the reason that they believed the removal to such location would damage their property.—Appellate Division, Supreme Court of New York.

INADMISSIBLE AGAINST POLICE OFFICER

People ex rel. Tighe vs. McAdoo, Police Commissioner.—In a proceeding against a police officer before the Police Commissioner on a charge of disobedience of orders and rules of the Police Department and neglect of duty, evidence examined, and held insufficient to sustain the determination of the Commissioner finding the officer guilty. In a proceeding before the Police Commissioner against the relator, a police officer, on the charge of disobedience of orders and rules of the Police Department and neglect of duty, admissions and statements made in the private office of the Commissioner in the absence of the relator were inadmissible against him, since the accused was privileged to be confronted by his accusers.—Appellate Division, Supreme Court of New York.

MUNICIPAL REPORTS

Annual Report of the Comptroller (advance pages) of the City of New York, 1906. Herman A. Metz, Comptroller.—This report deals with the operations of the City Treasury and Sinking Funds of the City of New York and is the second in the series of advance reports of the Comptroller, the first of which was a pamphlet issued June 30, 1906. The present publication goes more deeply into detailed facts than its predecessor. This is made possible by advancing the time for the completion of the full report. The report begins with a cash summary in which the income and outgo are analyzed under broad classifications so as to show the source of revenue and the purposes of expenditure. This is followed by six tables, constituting a more complete summary. A very interesting summary is given of the miscellaneous revenues collected by the various departments. The statement of funded debt shows the total amount of corporate stock, assessment bonds, general fund bonds and revenue bonds, issued, redeemed and outstanding. The assessed valuation of taxable real and personal property and non-taxable real estate are also given.

Fiftieth Annual Report, Comptroller, Detroit, Mich. 1906. Richard P. Joy, Comptroller.—This report is compiled in accordance with specific requirements of the law; so far as practicable, however, the classification of receipts and expenditures adopted by the Census Bureau has been followed. The books of the city are a record of "Receipts and Disbursements." The "Revenue and Expense" plan is considered unnecessary for the reason that at the end of the fiscal year the amount of accounts receivable is small, and bills are kept paid up to date. The seven parts into which the accounts are divided are: Analysis of Receipts and Disbursements. The Funds. The Public Debt and the Sinking Fund. Corporate Wealth Comparisons. Miscellaneous Tables. Estimates, Appropriations, Assessed Valuation and Tax Rate.

Annual Report, Comptroller, City of Rochester, N. Y. 1906. S. B. Williams, Comptroller.—During the past few years close attention has been paid to raising the accounting methods of Rochester to a scientific standard. Evidence of this work is found in the Comparative General Balance Sheet, the Revenue and Expense Accounts and the table of fixed properties. In the Fixed Properties table the various properties are depreciated each year, the amounts of depreciation being charged to Capital Surplus Account and appearing on the General Balance Sheet.

Auditor. Fifty-third Annual Report of. Fall River, Mass. 1906. Henry W. Clarke, City Auditor.—The expenses of the city for the year were \$3,008,225; the funded debt of the city was \$4,228,500 in addition to the water debt of \$1,550,000. The appropriations from direct taxation were \$1,344,970; receipts from city departments were \$67,900; receipts from general revenue, \$233,500; the expenditures were \$1,950,229. The assessed valuation of the city was \$83,465,821, and the tax rate \$18.40 per \$1,000. The total value of city property was \$6,740,547. The net municipal debt was \$2,848,909.

National Association of Comptrollers and Accounting Officers. Proceedings of the First Annual Convention, September, 1906, and of the Preliminary Organization at Washington, D. C., February, 1906. Howard C. Beck, Secretary.—This organization was organized at Washington, D. C., February 14, 1906, through the instrumentality of Hon. Samuel B. Williams, City Comptroller of Rochester, N. Y., who issued a call for a meeting of fiscal officers of cities in connection with the conference of such officials called by the Bureau of Census on the subject of Uniform Municipal Accounting. The object of the Association is "the consideration of improved methods of public finance and the extension of the movement for the installation of a uniform system of State and Municipal Accounting and Reporting, properly captioned and classified throughout the United States and the promotion of legislation towards these ends." The volume contains the proceedings of the temporary organization, and also of the first annual convention at Chicago, Ill. These include an address of welcome by Mayor E. F. Dunne; the President's address, by Samuel B. Williams; "Chicago's Method and Experience," by John A. May; "Detroit's Method and Experience," by Howard C. Beck; "New York's Method and Experience," by Richard M. Chapman; "Administration of a Public Debt," by Herman A. Metz; "Uniform Municipal Accounts," by Le Grand G. Powers and Harry B. Henderson; "The Audit of Claims Against a City," by George M. Rex and Frank W. Smith; "Methods of Municipal Accounting," by Louis E. Gorselin and Louis Betz.

Richmond, Va., 1907. The Capital, Metropolis and Historic Center of the Old Dominion. Edited by George S. Crenshaw, Special Accountant. Published by the Municipality.—This handsomely printed and illustrated brochure contains a historical sketch of the city from its earliest settlement. The present, however, is its special concern. A page is devoted to the illustration and brief description of principal municipal features, such as: Streets, Public Schools, Water Works, City Gas Works, Police Department, Fire Department, Charities, Parks, Churches, Hospitals, Educational Institutions and Hotels. Altogether this is the most striking and artistic presentation of city institutions that has reached the office of the "Municipal Journal and Engineer" for many a long day.

PATENT CLAIMS

863,900. Apparatus for Regulating Pressure in Pipes. John B. Broadhead, Wellholme, Brighouse, England. Filed April 22, 1907. Serial No. 369,570.

The combination, with a regulator casing provided with an inlet for high-pressure liquid and an outlet, of a main valve for closing the said inlet, a main cylinder, a main piston slidable in the said main cylinder and operatively connected with the said main valve, pipes or passages connecting the said main cylinder with the said inlet and outlet respectively, auxiliary valves controlling the said pipes or passages, an auxiliary cylinder connected to the said outlet, an auxiliary piston slidable in the said auxiliary cylinder, and lever mechanism operatively connected with the said auxiliary piston and auxiliary valves and operating to place the said main cylinder in communication with the said inlet and out of communication with the said outlet when the pressure in the said outlet exceeds a prearranged limit, thereby causing the said main piston to close the said main valve.

863,959. Reinforcing-Bar for Concrete, Etc. Sydney B. Williamson, Baltimore, Md. Filed Jan. 19, 1907. Serial No. 353,031.

A bar for the purpose specified, said bar being polygonal in cross section and having within each face thereof elevations projecting therefrom and having at the intersections of its faces elevations intermediate of the elevations in the faces and diminishing in height from the longitudinal central portion to the ends thereof, substantially as specified.

£64,022. Facing for Embankments, Dams, and the Like. Robert R. L. de Muralit, Zierikzee, Netherlands. Filed Aug. 15, 1906. Serial No. 330,694.

A facing of concrete composed of slabs of armored or not armored concrete, independent the one from the other and of a frame also of armored or not armored concrete, anchored to the ground between these slabs, the sides of the frame being rabbeted over the slabs so as to maintain the latter in position but not connected to the slabs so as to leave the same a certain individual independence.

£64,068. Manufacture of Cement and Other Products. August P. Bjerregaard, Mineola, N. Y., assignor of one-half to Robert C. Mitchell, Mount Vernon, N. Y. Filed May 7, 1907. Serial No. 372,431.

A process of modifying the intensity of a blast flame, consisting in introducing into said flame at or near its point of origin a finely divided solid material capable of generating in the flame a non-combustible gas, with the absorption of heat.

£64,069. Pavement-Marker. Rudolph S. Blome and William J. Sinek, Chicago, Ill. Filed Feb. 7, 1907. Serial No. 356,235.

In a pavement marker, the combination of a main frame, rollers or wheels supporting said main frame, tracks upon which said rollers are adapted to travel, a plurality of markers supported by said frame, and means to turn said rollers to move said frame and groove the surface of the pavement by said markers, substantially as described.

864,247. Street-Indicator. Henry M. Lambert, Portland, Ore. Serial No. 200,396. Renewed May 7, 1907. Serial No. 372,341.

In an apparatus of the class described, a housing having side and end walls and a top, said side walls having exhibiting openings, a shaft passing through the end walls of the housing, a cam on said shaft, a disk having a stud and a dog on said shaft adjacent said cam, a pair of arms on said shaft adjacent said disk, a pack of cards within the housing, pusher devices for feeding the pack laterally, levers fulcrumed on the housing end for operating said pushers, means for operating said levers comprising a pivoted forked lever co-operating with said dog, a latch member co-operating with said forked lever, means for locking said latch member to its adjusted positions at times, said arms having hooks, means for turning said shaft to operate said cam, said disk and said arms, said arm hooks being adapted to engage said cards to remove them one by one from in front of the exhibiting opening in the side wall of the housing, a card separator within the housing for separating the cards from the pack, and means on the outside of the housing connected with the card separator and operated by said cam for operating said card separator, and means for returning the operating parts to their normal positions.

864,497. Road-Scarifier. Edward T. Wright and Charles Longenecker, New York, N. Y., assignors to Charles Longenecker & Company, New York, N. Y., a Corporation of New York. Serial No. 341,830.

In a road scarifier, the combination with an elongated metal body, supported centrally upon a transverse axle, and having an upright guideway at one end, of a cross-head movable within said guideway, a supporting wheel carried by said cross-head, an adjusting screw fixed non-rotatably to the cross-head and extending upwardly therefrom, and a nut journaled in a suitable bearing at the upper end of said guideway and fitting said screw.

864,498. Road Roller. Edward T. Wright and Charles Longenecker, New York, N. Y., assignors to Charles Longenecker & Company, New York, N. Y., a Corporation of New York. Serial No. 346,285.

In a road roller, a pair of traction wheels, a counter shaft geared to said traction wheels, a pair of intermediate gears upon said shaft, an engine shaft, a pair of pinions movable upon said engine shaft into and out of engagement with said intermediate gears, shifting devices operatively connected to said pinions, a wrist plate pivoted between said shifting devices, and links connected to said wrist plate at points less than 180° apart and also connected to said shifting devices.

NEWS OF THE SOCIETIES

New England Water Works Association.—The twenty-sixth annual convention of this association was held at Springfield, Mass., September 11, 12 and 13, and was attended by about 250 members and guests. Of this number between 50 and 60 were associate members, most of which had exhibits of water works appliances in a room of Cooley's Hotel, set apart for this purpose. The papers presented were a description of the Springfield Water Works, by Albert E. Lochridge, Chief Engineer of the Water Department, which was discussed by Allen Hazen; a talk on Australian water works, with lantern slides, by Mr. Hazen; a description of the Peabody, Mass., tunnel, reservoir and pumping station and high-duty Worthington pump, by F. A. Barbour; a paper by Charles T. Main on the computation of the value of water power and the damage caused by the Diversion of water used for power (this paper was read in 1904 before the American Society of Mechanical Engineers, and was re-read at this time by request); another, on water rights, by Richard A. Hale; these two last papers being discussed by H. K. Barrows, Leonard Metcalf, Charles W. Sherman, John H. Cook, E. L. Grimes, E. H. Foster and W. H. V. Reimer. A paper by Clemens Herschel, discussing this subject, was read by title. The Waltham reinforced cement concrete reservoir, which was described in this journal a few months ago, was discussed by Bertram Brewer, and was followed by a discussion concerning water-proofing reservoirs, these discussions being offered by Dabney Maurey, W. C. Harvey, F. L. Fuller, Allen Hazen, A. P. Folwell, W. H. V. Reimer and T. H. McKenzie. Mr. R. Conard read a paper dealing with the possibility and desirability of enforcing the standard cast-iron pipe specifications of the society, calling special attention to the desirability of that feature providing for a uniform outside diameter of the various classes of each nominal size, the inner diameter being varied to give the required weights. This paper was discussed by Mr. Reimer and others. Mr. McKenzie desired an expression of opinion as to the value of inspection at the foundry by municipalities, which drew forth a general consensus of opinion that such inspection should not be omitted. Mr. Charles R. Wood advocated the cutting off of the upper end of each pipe cast, in order to remove any possible scoria or spongy iron, the casting being extended beyond the bead to permit of this. On Thursday evening Hiram A. Miller described, with many lantern slides, the work being done in constructing the Charles River Basin and Water Park, which will, when completed, add greatly to the attractiveness of this part of the cities of Boston and Charlestown. On Friday a large percentage of those present profited by the invitation of the Chapman Valve Manufacturing Company to visit its plant at Indian Orchard, where the various processes of manufacturing, assembling and testing of valves were fully shown. After a lunch, furnished by the company, several of the party inspected the filtration plant of the Springfield Water Department.

In connection with the papers dealing with water rights, the discussion was followed by a motion by Mr. Foster, for which was finally substituted one by Mr. Sherman, "That a committee of five be

appointed by the President to collect data relating to the awards that have been made for damages resulting from the diversion of water; also to consider the practicability of joint action with the National Cotton Manufacturers' Association, or other organizations of mill owners, leading to the formation of standard rules and methods of computing or assessing damages for the diversion of water."

The various manufacturers represented, most of whom had exhibits, were as follows: Neptune Meter Company, by Fred A. Smith; National Meter Company, by J. G. Lufkin and Charles H. Baldwin; Pittsburg Meter Company, by T. C. Clifford and V. E. Arnold; Union Water Meter Company, by F. E. Hall and S. P. Anderson; Thomson Meter Company, by E. N. Shedd and W. S. Cetti; Hersey Manufacturing Company, by Albert Glover, J. A. Tilden, W. A. Hersey and W. M. C. Sherwood; Henry R. Worthington Company, by Samuel Harrison and J. Watson Sims; Rensselaer Manufacturing Company, by Fred S. Bates and Charles L. Brown; Chapman Valve Manufacturing Company, by Edward F. Hughes, Ralph W. Wight, William V. Thulfull and Edward L. Ross; Ludlow Valve Manufacturing Company, by H. F. Gould; Ross Valve Manufacturing Company, by William Ross; Monarch Valve and Manufacturing Company, by W. D. Hostey; Eddy Valve Company, by T. S. Robinson; Fairbanks Company, by F. A. Leavitt and C. F. Sleeper; Builders' Iron Foundry, by A. B. Coulters; Pitometer Company, by Edmund M. Blake; Water Works Equipment Company, by W. H. Van Winkle and W. H. Van Winkle Jr.; United Lead Company, by Fred H. Craig; H. Mueller Manufacturing Company, by A. C. Pilcher and George A. Caldwell; United Brass Manufacturing Company, by H. P. Keegan; United States Cast Iron Pipe and Foundry Company, by Frank V. Nevins and Thomas H. McGechin; The A. P. Smith Manufacturing Company, by F. N. Whitcomb; Norwood Engineering Company, by H. W. Hosford; Lead-Lined Iron Pipe Company, by Thomas E. Dwyer; Hart Packing Company, by Horace Hart; R. D. Wood & Company, by Charles R. Wood; Anderson Coopering Company, by Charles E. Pratt; Platt Iron Works Company, by F. H. Hayes; Central Foundry Company, by C. F. Blount; Dean Steam Pump Company, by Robert E. Newcomb; Engineering News, by Frank C. Wight and A. E. Cornfeld; Fire and Water Engineering, by C. N. Campbell and F. W. Shepperd; Municipal Journal and Engineer, by A. P. Folwell, G. E. Sly and E. A. Stevens.

National Firemen's Association.—President J. McNeill called to order the tenth annual convention of the association at Oklahoma City, September 5. H. Y. Thompson, President of the Chamber of Commerce, delivered the address of welcome. President McNeill in his annual address dealt with the work of the association in the past and its hopes for the future—particularly in the matter of securing special legislation for firemen. Papers were read by F. E. Smith, of Warren, O., on "Some Plain Reasons for a Wider Patronage to the Cause of Fire Journals and Firemen's Literature." Chief Mark Kessler, of Oklahoma City, spoke on "The Needs for Uniformity in All Our Standards of Apparatus." More than 2,000 visiting firemen took part in the parade.

League of Cities of the Third Class in Pennsylvania.—The convention was called to order at McKeesport, September 10, by Mayor William H. Coleman of McKeesport, the President. City Clerk E. E. Charlton of Bradford, Secretary of the convention, called the roll, which showed that ten cities in all were represented by forty-seven delegates—the cities were: Reading, Bradford, New Castle, Chester, Wilkes-Barre, Williamsport, Harrisburg, Easton, Allentown and Altoona. Mayor Coleman in his address of welcome reviewed the history of McKeesport from the time General Braddock discovered the site, to his sorrow, up to the time of the present industrial development. Mayor F. C. Kirkendall, of Wilkes-Barre, replied. Business meetings followed. Later J. A. Gardiner, of New Castle, spoke of Ancient Legislation Affecting Third Class Cities. A number of subjects were discussed, such as, should act of 1891 be amended to authorize sewer connections to curb; discussion; Civil Service in Third Class Cities; An Act to Lay Sidewalks when Streets Are Being Improved; Necessary Municipal Improvements, William Flinn, Pittsburg; City Patriotism; Executive Methods and Experiences. Dr. J. B. Rickey, Superintendent of the McKeesport Schools, spoke of "Recent School Legislation Affecting Cities of the Third Class." Frank P. Cummings, of Williamsport, delivered an address on "The Requisite Formalities in Passing Ordinances and Resolutions." T. Chalkley Hatton, C. E., of Wilmington, Del., spoke on "Suggestions Concerning Street Paving and Its Maintenance." Alexander Potter, C. E., of New York City, delivered an extended address on "Municipal Sanitation," in which he discussed the questions of water works, sewerage and sewage purification, garbage disposal and street cleaning. The social features of the meeting were steamboat trips on the river and automobile rides. The next meeting of the League will be at Altoona, Pa. The following officers were elected for the coming year: President, Mayor S. H. Walker, of Altoona; Vice-President, Mayor Fred Kirkendall, of Wilkes-Barre; Treasurer, J. Craig, Jr., of Chester; Secretary, Edward C. Charlton, of Bradford. Trustees, Mayor Fred Winger, of Bradford; City Solicitor F. P. Cummings, of Williamsport, and City Clerk A. E. Rhodes, of New Castle. Honorary Vice-Presidents, Mayor John H. Reitz, of Meadville; William H. Reichard, Wilkes-Barre; Walter S. Greevy, of Altoona; Fred P. Schoonermaker, of Bradford; James R. Bagshaw, of Chester; John McNeal, of Easton; Christian Nauss, of Harrisburg; Samuel Milliken, of McKeesport; J. A. Gardner, of New Castle; W. M. Dame, of Titusville; William J. Rourke, of Reading; L. Waltz, of Williamsport, and J. L. Rouss, of York. Vice-presidents for the cities of the League not represented at the convention will be appointed by the secretary.

Illinois Mayors' Association.—Mayors and other municipal officers from nearly every city of importance in Illinois assembled at Bloomfield, Ill., September 9, to attend the second annual convention of the Association. City Attorney Louis Fitzhenry welcomed the visitors and Mayor Carl Botsford of Elgin responded. The annual report of President McCaskrin of Rock Island was the feature of the morning session. Other addresses were by City Attorney Roy Steeley of Springfield, Mayor F. L. Marsteller of Geneva, Mayor Silas Cook of East St. Louis, and

Mayor Thomas O'Connor of Peoria. On the second day of the convention, after an automobile ride to the points of interest, the delegates resumed their sessions. The program of addresses was carried out as follows: "Bloomington," former Vice-President Adlai E. Stevenson; "The Value of Interurban Lines to Our Municipalities," George Shumway, Mayor of Galesburg; "Permanent Improvements," W. A. Pennreck, Mayor of La Salle; "The Duties of a City Engineer," Wallace Trechler, City Engineer of Rock Island.

Western Society of Engineers.—President W. L. Abbott, at the first meeting for the season of the society in their rooms, Chicago, Ill., occupied the chair. He announced that plans were being made to rearrange the rooms so that larger meetings could be held. The paper of the evening was read by Prof. Daniel W. Mead on "Hydraulic Engineering at the University of Wisconsin." The author called attention to the practice in the University of Wisconsin of selecting professors from the ranks of practical engineers. Following the reading of the paper the subject was discussed by Mr. Allen Andrews, Mr. J. H. Warder, Mr. Junkersfeld and Mr. E. E. R. Tratman.

New York Fire Department Exhibition.—The annual exhibition, to be held in New York, October 12, at the Worth Monument, will include the operation of the water-tower, life-tower and ladders by firemen detailed by Chief Croker. Mayor McClellan will, during the ceremonies, award medals to the seven firemen who have performed the most notable acts of bravery during the past year.

Calendar of Meetings

- September 17-19.
Central States Waterworks Association.—Tenth annual convention, Wheeling, W. Va.—W. Allen Veach, Secretary, Newark, Ohio.
- September 17-19.
Pacific Coast Gas Association.—Fifteenth convention, Santa Cruz, Cal.—John A. Britton, Secretary, San Francisco, Cal.
- September 17-19.
National Association of Controllers and Accounting Officers.—Second annual convention, Hotel Jefferson, Richmond, Va.—Howard C. Beck, Secretary, Detroit, Mich.
- September 17-19.
League of Iowa Municipalities.—Tenth annual convention, Council Bluffs, Iowa.—T. G. Pierce, Secretary, Marshalltown, Ia.
- September 18-20.
Colorado Light, Power and Railway Association.—Annual convention, Denver, Col.
- September 18-20.
Michigan Gas Association.—Sixteenth annual meeting, Battle Creek, Mich.—Alonzo P. Ewing, Secretary.
- September 18-20.
League of American Municipalities.—Annual convention, Jamestown Exposition, John MacVicar, Secretary, Des Moines, Ia.
- September 23-28.
National Irrigation Congress.—Fifteenth annual convention, Sacramento, Cal.
- September 25.
New Hampshire State Firemen's Association.—Convention, Laconia, N. H.—George L. Osgood, Secretary, Concord, N. H.
- September 30-October 4.
American Public Health Association.—Thirty-fifth annual meeting, Atlantic City, N. J.—Dr. Charles O. Probst, Secretary, Columbus, O.
- October 1-4.
Pennsylvania State Firemen's Association.—Convention and tournament, Pittsburgh, Pa.—W. W. Wunder, Secretary, Reading, Pa.
- October 1-4.
American Society of Municipal Improvements.—Annual convention, Detroit, Mich.—George W. Tillson, Secretary, 831 Ocean avenue, Brooklyn, N. Y.
- October 8-11.
International Association of Fire Engineers.—Thirty-fifth Annual Convention, Washington, D. C.—James McFall, Secretary, Roanoke, Va.

October 10-12.
American Electro-Chemical Society.—Fall meeting, Chemists' Club, 108 West 55th street, New York City.—Dr. Joseph W. Richards, Lehigh University, South Bethlehem, Pa.

October 14-16.
American Street and Interurban Railway Engineering Association.—Annual convention, Atlantic City, N. J.—S. W. Mower, Secretary, Southwestern Traction Co., London, Ont.

October 14-18.
American Street and Interurban Railway Association.—Annual convention, Atlantic City, N. J.—B. V. Swenson, Secretary, Engineering Societies Building, 33 West Thirty-ninth street, New York.

October 15-17.
Southern New York Firemen's Association.—Convention and tournament, Greenport, N. Y.—J. H. Downing, Secretary, 211 Duffield street, Brooklyn, N. Y.

October 15-17.
Association of Railway Superintendents of Bridges and Buildings.—Annual meeting, Milwaukee, Wis.—S. F. Patterson, Secretary, Concord, N. H.

October 16-18.
American Gas Institute.—Second annual meeting, Washington, D. C.—Jas. W. Dunbar, Secretary, New Albany, Ind.

November 12.
National Tax Association.—Conference, Columbus, O.

November 19.
National Municipal League.—Annual convention, Providence, R. I. (in conjunction with the American Civic Association).—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

December 26.
International Sanitary Convention of American Republics.—Third international meeting, Mexico City.—Surgeon General Walter Wyman, Chairman International Sanitary Bureau, Public Health and Marine Hospital Service, Washington, D. C.

TRADE NOTES

Almanac.—The Studebaker Brothers' Manufacturing Company, South Bend, Ind., is already sending out the ninth annual edition of almanacs for the year 1908. Dealers who desire copies for distribution among their customers should file their orders at once, as the reserve supply will be limited.

Decimal Classification.—The Engineering Experiment Station of the University of Illinois has just published Bulletin No. 13, "An Extension of the Dervay Decimal Classification Applied to Architecture and Building." This forms a supplement to the extended classification applied to the branches of engineering previously issued in Bulletin No. 9. The bulletins are useful to engineers and constructors in classifying books, pamphlets, articles in periodicals and other data. Copies may be secured on application to the Director of the Engineering Experiment Station, Urbana, Ill.

Catalogues.—Burns & McDonnell, civil engineers, Scarritt Building, Kansas City, Mo., want trade catalogues of sanitary and hydraulic appliances.

Fireproof Roofing.—The Merchant & Evans Co., Philadelphia, Pa., has published in a neat pamphlet a paper on "Tin Roofing and Insurance," read by Mr. Powell Evans before the National Association of Master Sheet Metal Workers at their recent convention, in Cleveland, O.

Gas Engines.—The Allis-Chalmers Company, Milwaukee, Wis., is building gas engines of 4,000 or 5,000 h.p. capacity for the Indiana Steel Company's works at Gary, Ind. These engines have the largest cylinder diameter of any gas engines yet built in this country, the size being 44 inches in diameter by 54 inches stroke. The weight of the engine is 1,500,000 pounds; the crankpins are 20 inches in diameter; the shaft is 30 inches in diameter in the bearing; the flywheel is 23 feet in diameter, weighing 200,000 pounds; the speed of the engine is 83 1/3 revolutions per minute.

Portable Wattmeter Calibrators.—The Fort Wayne Electric Works, Fort Wayne, Ind., in Bulletin No. 1097, describe their portable wattmeter calibrator, Type KM-1. The device has been put on the market to meet a want that has been felt by central station men, who need a quick and accurate method of doing this work. The ordinary method of calibrating meters, by the use of standard indicating instruments and a stop watch, is accurate but too slow.

Pulverizers.—The Kent Mill Company, 170 Broadway, New York City, announces that, owing to the fall in cost of materials, the firm is able to reduce the price of Kent Pulverizers to \$2,500.

Sanitary Bureau.—Announcement has been made of the formation of the Albany Sanitary Bureau, of Albany, N. Y., by Willis G. Tucker, M.D., Ph.D.; Olin H. Landreth, C.E.D.Sc., and James H. Stoller, A.M., Ph.D. The object of the bureau is to conduct a professional practice in making sanitary investigations, examinations, inspections and reports. In the prospectus, attention is called to the fact that even in the States of New York and Massachusetts, where sanitary conditions are considered as good, the number of deaths attributed to old age, the only normal and legitimate cause of death, is only about 4 per cent of the total number of deaths, 90 per cent. being attributed to some form of disease. Forty per cent. of this 90 per cent. are caused by diseases known to be intimately affected by sanitary conditions.

Smoke Reducer.—The G. H. Scharf Co., Ypsilanti, Mich., has recently installed a stoker and smoke-consuming device in the plant of the Fairfield Rubber Company, Bridgeport, Conn. This device, built on the theory that the injection of steam and air over the fire combines with the hydro-carbons, forming a gas that burns at a low temperature, is guaranteed to abate the smoke at least 95 per cent., besides promoting more perfect combustion, keeping the boilers and tubes practically clean and decreasing fuel bills.

Switchboards.—The Westinghouse Electric and Manufacturing Co. has recently shipped the largest switchboard equipment ever turned out in the electrical business. The board is composed of 100 panels and cost \$150,000. It was made by the Westinghouse Company for the Rio de Janeiro Tramway and Power Company, of Rio de Janeiro, Brazil, which operates a water-power plant, known as the Brazilian Niagara, about forty miles from Rio de Janeiro, and having a capacity of 40,000 h.p.

Water Softening.—Wm. B. Scaife & Sons Company, 221 First street, Pittsburgh, Pa., has received an order from the American Steel and Wire Company for a 25,000 h.p. We-Fu-Go system, consisting of eight large treating and settling tanks and eight mechanical gravity filters, all to be installed at the Newburgh Steel Works, Cleveland, O. This order was placed after a six months' trial of a 12,500 h.p. We-Fu-Go system at Donora, Pa., where a decided saving in the cost of operating the boilers was made. Other sales have recently been made to the Rochester & Pittsburgh Coal and Iron Co., Punxsutawney, Pa.; Shenango Furnace Co., Sharpville, Pa.; Armstrong Cork Co., Oakdale, Pa.; Fostoria Glass Co., Moundsville, W. Va.; Allen & Wheeler Co., Troy, O.; Stone & Webster Engineering Corporation, Boston, Mass.; Paterson Parchment Paper Co., Passaic, N. J.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Buildings, Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Street Improvements				
Pennsylvania...	Lancaster.....	September 18.....	Constructing 9,381 ft.; also 10,847 ft. road E. Lampeter twp....	Jos. W. Hunter, Harrisburg, Com'r.
Missouri.....	Kansas City.....	September 19, 11 A.M.	Artificial stone sidewalks, 23 contracts; curbing, 5 contracts..	E. A. Harper, City Engineer.
New York.....	Bloomington.....	September 19, noon..	Erecting undergrade crossing Erie RR. at Road No. 154.....	Fred'k Skene, Albany, State Eng'r.
Ohio.....	Cincinnati.....	September 19, noon..	Grading, paving, etc., 3 streets and 2 avenues; cost, \$181,770...	C. N. Dannenhowe, City Eng'r.
Indiana.....	Fort Wayne.....	Sept. 19, 7:30 P.M.	Three cement sidewalks; grading and cement walks; vit. block paving, 1 street; asphalt paving, 1 street.....	H. W. Becker, Clk. Bd. Pub. Wks.
Iowa.....	Des Moines.....	September 19.....	Constructing 4,317 sq. yds. brick paving, 1,925 lin. ft. curb....	W. W. Wise, Bd. Pub. Wks.
Kansas.....	Iola.....	September 19.....	Paving, grading and curbing portions of various streets.....	M. R. Amerman, City Engineer.
Indiana.....	Frankfort.....	September 20, 10 A.M.	Constructing gravel road No. 19, 18,408 ft. long.....	Chas. F. Cromwell, Co. Auditor.
New York.....	Buffalo.....	September 20, 11 A.M.	Repaving portions of various streets.....	F. G. Ward, Com'r Pub. Works.
Indiana.....	Rockville.....	September 20, noon..	Constructing stone pike, 1½ miles long.....	W. B. La Bow, Veedersburg, Surv.
Texas.....	Dallas.....	September 20, 3 P.M.	Paving, curb, gutter, Ross Ave., Main St., any material; cost, \$100,000 to \$150,000, including curb and gutter.....	E. L. Dalton, City Engineer.
Ohio.....	Wapakoneta.....	September 20.....	Grading and graveling Vine Street.....	Chas. E. Fisher, City Clerk.
Ohio.....	Cincinnati.....	September 20.....	Improving Montgomery Pike.....	Stanley Struble, County Clerk.
New Hampshire	Allenstown.....	September 20.....	Constructing trap rock road, to cost \$4,000.....	A. W. Dean, Concord, State Engr.
Wisconsin.....	Racine.....	September 21, 10 A.M.	Grading Yout and Bank St.; 5,422 and 244 cu. yds. excavation..	P. H. Connolly, City Engineer.
Iowa.....	Des Moines.....	September 21, 11 A.M.	Paving brick, on 6-in. concrete, 2 sts.; also 700 ft. curb.....	W. W. Wise, Bd. Pub. Works.
Ohio.....	Cleveland.....	September 21, 11 A.M.	Repairing Wooster pike, inc., 750 cu. yds. bank sand, 150,000 second-quality brick, 800 cu. yds. crushed stone or slag, 325 bbls. Portland cement.....	Julius C. Dorn, County Clerk.
Dist. of Col'bia.	Washington.....	September 21, noon..	Laying cement sidewalks.....	Jay J. Morrow, Eng'r Com'r.
Ohio.....	Silverton.....	September 21, noon..	Laying cement sidewalks.....	A. A. Sprague, Village Clerk.
Maine.....	Fort Williams.....	September 21.....	Constructing concrete walks at Fort.....	Capt. F. J. Morrow, Q. M.
Ohio.....	Gettysburg.....	September 21.....	Grading and graveling Main St.; comb. curb and gutter, walks, etc.....	John B. Knisely, Village Clerk.
Ohio.....	Hamilton.....	September 21.....	Paving and sanitary sewers, South D St.....	Board of Public Service.
Ohio.....	Ottawa.....	September 21.....	Constructing 7 stone roads, Palmer, Monroe and Van Buren twps. inc. 20,000 cu. yds. crushed stone and several miles 6-in. farm tile.....	J. P. Maidlow, Co. Engineer.
Illinois.....	Lincoln.....	September 23, 9 A.M.	Excavating and removing old material, inc. 2,800 cu. yds. grading, and paving with brick block on 5-in. concrete 9,977 sq. yds., combined concrete curb and gutter, 6,142 ft.....	E. B. Maltby, Pres. Bd. Local Imp.
New Jersey...	Woodcliff Lake..	September 24, 8 P.M.	Macadamizing 4 roads, distance of 13,768 ft.....	H. G. Hering, Jr., Boro. Engineer.
Pennsylvania...	Philadelphia.....	September 24.....	Paving 16 miles with asphalt on crushed stone; cost, \$500,000; also 9 miles with granite or vit. clay block; cost, \$250,000...	Geo. R. Stearns, Dir. Pub. Works.
Indiana.....	Lebanon.....	September 24.....	Constructing Ezra Good Gravel Road.....	B. F. Simmons, County Auditor.
Pennsylvania...	Reading.....	September 25, 2 P.M.	Constructing subway, etc., under P. & R. Ry. at Spring St.....	Elmer H. Beard, City Eng'r.
New York.....	New York.....	September 26, 3 P.M.	Furnishing 3,000 cu. yds. fine bank gravel; 4,000 cu. yds. double-screened Hudson River road gravel; topsoil or garden mould to parks Boros, Brooklyn and Queens.....	Moses Herrman, Park Board.
Illinois.....	Danville.....	Sept. 26, 7:30 P.M.	Paving Oakwund Ave., Green and Main Sts.; curb and pave Van Buren St.....	Board Local Improvements.
Indiana.....	Vincennes.....	September 28, 2 P.M.	Constructing 16,019 ft. of gravel road.....	County Commissioners.
Virginia.....	Manassas.....	September 28.....	Macadamizing streets of town; water and light plant.....	O. E. Newman, Chm. Com.
Ohio.....	Steubenville.....	September 30.....	Paving Reserve Ave. with fire brick.....	T. W. Vance, Clk., Bd. Pub. Serv.
North Carolina.	Durham.....	October 1, 3:30 P.M.	Constructing 11½ miles macadam road, inc. 60,000 sq. yds. 6-in. macadam and 75,000 cu. yds. excavation, together with necessary pipe, and reinforced concrete drains.....	Gilbert C. White, Engineer.
Montana.....	Billings.....	October 1, 8 P.M.	Gravel macadam, 58,653 sq. yds.; 3,000 ft. sewer, etc.; 17,480 ft. gutter; also 6,305 sq. yds. shale brick, Dist. 20 and 21.....	J. D. Matheson, City Clerk.
Ohio.....	Cleveland.....	October 5.....	Completion of Miles avenue improvement.....	A. B. Lea, County Surveyor.
Indiana.....	Salem.....	October 7, 1:30 P.M.	Gravel roads: 24,165 ft. Washington twp., cost, \$11,949; also 6,733 ft. Monroe twp., cost, \$3,014.....	S. G. Ellis, County Auditor.
Indiana.....	Decatur.....	October 7.....	Constructing macadam road in Root township.....	C. D. Lewton, County Auditor.
Indiana.....	Hartford City...	October 7.....	Constructing 10,465 ft. and 15,185 ft. macadam road, Harrison twp.; also 15,775 ft. on line between two townships.....	L. W. Dougherty, County Auditor.
Indiana.....	Vincennes.....	October 8, noon....	Constructing 8,000 ft. of gravel road.....	J. L. Ackerman, County Auditor.
Alabama.....	Riverton.....	October 12, 11 A.M.	Paving, riprap and excavation at Colbert Shoals Canal.....	Maj. Wm. W. Harts, Eng. Corps.
Indiana.....	Sunman.....	October 14, 6 P.M.	Laying cement sidewalks.....	E. R. Behlmer, Town Clerk.
Hawaii.....	Honolulu.....	October 15, noon....	Furnishing 14,000 bbls. Portland cement; 16,500 tons broken stone and 7,000 tons sand.....	Capt. C. W. Orwell, Eng'r Corps.
Water Supply				
North Carolina.	Charlotte.....	September 19, noon..	Furnishing 440 tons c. i. pipe and specials, 37 Matthews pattern fire hydrants and 6, 8, 12, 16, 20-inch valves; also for laying 1,800 ft. 20-in., 4,150 ft. 12-in. and 250 ft. 6-in. mains, with valves, hydrants and specials.....	P. H. Williams, Supt. Water Works.
West Virginia..	Elkins.....	September 20.....	Constructing water works.....	Penniman and Farley, Baltimore, Md., Engineers.
Colorado.....	Canon City.....	September 20.....	Bldg. reservoir at Cottonwood Creek and pipe line to city mains.	C. L. Mitten, City Engineer.
Georgia.....	Ft. Oglethorpe..	September 21, 11 A.M.	Deep well and water system, Government Target Range.....	Capt. E. D. Anderson, Q. M.
Alabama.....	Mobile.....	September 25, 11 A.M.	Bldg. 150,000-gal. steel tank and trestle, pumping plant, ice machine and cold storage at Fort Morgan.....	Capt. L. F. Garrard, Jr., Box 605.
New York.....	Rome.....	September 25, noon..	Bldg. dam at Fish Creek and tunnel 5,500 ft. long.....	Knight & Hopkins, Engineers.
Illinois.....	Summit.....	September 25, 8 P.M.	Drilling a deep well 1,600 ft. more or less.....	Jas. Johnstone, Village Clerk.
New Jersey....	Highlands.....	Sept'ber 25, 8:30 P.M.	Bldg. municipal water works, inc. power house, stand pipe, pipe line, compound duplex steam pumps, air compressor, wells and receiving tank and steam boiler and piping.....	Runyan & Carey, Newark, Eng'rs.
Florida.....	Port Barrancas..	September 26, 11 A.M.	Building 200,000-gal. rein. concrete reservoir, installing steam pump and air compressor and extending water main.....	Lt. A. L. Rhoades, Q. M., U. S. A.
Wisconsin.....	Madison.....	September 27.....	Constructing 1,000,000-gal. concrete storage basin; also for drilling one or two artesian wells.....	John B. Heim, Supt. Water.
Virginia.....	Manassas.....	September 28.....	Constructing waterworks, electric lighting plant, etc.....	Pressey & Weller, Washington, D. C.
Delaware.....	Wilmington.....	Sept. 30, 1:30 P.M.	Constructing covered slow sand filters of 6 beds and 10,000,000-gal. covered filtered reservoir, etc.....	Theo. A. Leisen, Chief Engineer.
California.....	Los Angeles.....	Sept'ber 30, 3:30 P.M.	Furnishing f.o.b. cars Los Angeles, about 6,000 tons standard hub and spigot cast-iron water pipe; also 2 water tube 300-h.p. boilers and 7,000,000-gal. cross-compound engine.....	Wm. Mulholland, Supt. Water Bd.

Water Supply—Continued.

New Jersey.....	Harrison.....	October 1.....	Furn. and laying water main in Franklin St.....	B. P. Walsh, Town Clerk.
North Carolina.....	Fort Caswell.....	October 9.....	Building pump-house, ice plant and cold storage.....	L. Cravens, Quartermaster.
Delaware.....	Fort Du Pont.....	October 10.....	Remodeling water system; also building 150,000-gal. tank.....	Capt. J. L. Knowlton, Q. M.
Georgia.....	Atlanta.....	October 23.....	Furn. and erecting, complete, sectional washing pressure filter plant of 8 units, each 8 ft. diam. and 20 ft. long.....	Park Woodward, Bd. Water Comrs.

Sewerage

New York.....	Brooklyn.....	September 18, 11 A.M.	Bldg. sewer Flatbush Ave.; basins, Roebling St.....	Bird S. Coler, Boro. President.
Maine.....	Togus.....	September 19, noon.....	Improving sewer and drainage system, Soldiers' Home.....	Geo. W. Fuller, N. Y. City, Eng'r.
Rhode Island.....	Woonsocket.....	September 19, 2 P.M.	Constructing 900 ft. 8-in. sewer, inc. 600 cu. yds. rock excav'n.....	Frank H. Mills, City Engineer.
Indiana.....	Fort Wayne.....	Sept. 19, 7:30 P.M.	Constructing three vitrified pipe sewers.....	H. W. Becker, Clk. Bd. Pub. Works.
Ohio.....	Gibsonburg.....	September 20.....	Constructing main sewer of tile, inc. house connections, etc.....	W. O. Ditman, Village Clerk.
Pennsylvania.....	Lancaster.....	September 20.....	Sewers, etc., for all bldgs., Stevens Industrial School.....	Walter A. Miller, Clk. Com'n.
Ohio.....	Lakewood.....	September 20.....	Constructing sewers in Irene St., Lake, Kyle and Hillard Aves.....	Wm. H. Ebers, Eng. Co., Cleveland.
Nebraska.....	Aurora.....	September 21, noon.....	Constructing sewer system, to cost, \$10,500.....	Dennis Saylor, City Clerk.
Ohio.....	Hamilton.....	September 21, noon.....	Constructing sanitary sewers, etc., South D St.....	Board of Public Service.
New York.....	New York.....	September 23, 11 A.M.	General construction, etc., sewer plant, Parental School bldgs.....	C. B. J. Snyder, Supt. School Bldgs.
Indiana.....	Richmond.....	September 25.....	Constructing sewer in West Second Street.....	Fred R. Charles, City Engineer.
Illinois.....	North Chicago.....	September 27, noon.....	Laying sewers and drains at Naval Training Station.....	Commandant.
Ohio.....	Delaware.....	September 27, 6 P.M.	Constructing sewage disposal plant, Girls' Industrial School.....	T. F. Dye, Sec'y Bd. Trus.
Iowa.....	Boone.....	September 27.....	Constructing Co. drain No. 6; also forcement and clay tile.....	F. E. Jones, County Auditor.
Ohio.....	Paulding.....	September 28.....	Constructing sewer center W. Jackson Street.....	E. J. H. Cooper, City Clerk.
Ohio.....	Steubenville.....	September 30, noon.....	Constructing sewers in three streets.....	T. W. Vance, Clk. Bd. Pub. Serv.
Washington.....	Washington.....	September 30.....	Constructing sewer in valley of Soapstone Branch.....	Jay J. Morrow, Eng'r-Com'r.
California.....	Fairfield.....	September 30.....	Constructing sewerage system to cost \$20,000.....	Town Clerk.
New York.....	Newark.....	October 1, 10 A.M.	Constructing sewage disposal plant, Custodial Asylum.....	Chas. McLouth, Pres. Bd. Mgrs.
Michigan.....	Cadillac.....	October 1, noon.....	Constructing sewage purification works and pumping plant.....	Geo. Johnston, Clk. Bd. Pub. Wks.
Kentucky.....	Paducah.....	October 1, 3 P.M.	Bldg. 14 miles 6-in. vit. pipe laterals in 6 to 12-ft. trench.....	L. A. Washington, City Engineer.
Montana.....	Billings.....	October 1, 8 P.M.	Laying 3,000 ft. sewer, 12 manholes, 15 catch basins, paving, etc.....	J. D. Matheson, City Clerk.
Ohio.....	Leipsic.....	October 2.....	Constructing sewer, manholes, etc., in Poplar St.....	Riggs and Sherman, Toledo.
Florida.....	Fort Dade.....	October 3, 8 P.M.	Repair and extension to sewer outlet.....	Constructing Quartermaster.
Iowa.....	Muscatine.....	October 8.....	Furn. and placing c. i. pipe at Cross Leaves, Section 5.....	A. S. Lawrence, County Auditor.
Delaware.....	Fort Du Pont.....	October 10.....	Remodeling sewer and water systems, etc.....	Capt. J. L. Knowlton, Q. M.

Public Buildings

Illinois.....	Chicago.....	September 19, 10 A.M.	Erecting Union St. bath house; separate bids.....	John J. Hanberg, Com'r Pub. Wks.
Iowa.....	Muscatine.....	September 19, 3 P.M.	Construction U. S. Post-office.....	James Knox Taylor, Superv. Arch.
Oklahoma.....	Lawton.....	September 19, 8 P.M.	Constructing 8-room brick ward, public school.....	J. Ira Jones, Architect.
Alberta.....	Calgary.....	September 20.....	Erecting general hospital, 2 bldgs., 3 stories, red brick, stone trimmings; also nurses' home; cost, \$140,000.....	F. Parker, Secretary.
New Jersey.....	Paterson.....	September 20.....	New steam-heating apparatus; also boiler house for Almshouse.....	Wm. T. Fanning, Architect.
Pennsylvania.....	Lancaster.....	September 20.....	Erecting 2 cottages, etc., Stevens Industrial School.....	Walter A. Miller, Chm. Commission.
Missouri.....	Mt. Vernon.....	September 20.....	Erecting Medical Building at Mo. State Sanatorium.....	Dr. J. L. Eaton, Pres. Bd. M'g's.
New York.....	New York.....	September 23, 11 A.M.	Alterations, heating, ventilating, etc., school bldgs.....	C. B. J. Snyder, Supt. School Bldgs.
South Carolina.....	Latta.....	September 23, noon.....	Erecting brick construction school for high school.....	E. V. Richards, Bennettsville, Arch.
Illinois.....	Garrett.....	September 23.....	Plans for 4-room brick school, steam-heated; cost, \$8,000.....	J. E. Winship, Clk., Sch. Dist. 7
Pennsylvania.....	Danville.....	September 24, noon.....	Erecting three buildings, State Hospital for Insane.....	Dr. H. B. Meredith, Superintendent.
Ohio.....	Hamilton.....	September 24, 3 P.M.	Constructing, complete, U. S. Post Office Building.....	James Knox Taylor, Wash., D. C.
Virginia.....	Nat. S'd'r's Home.....	Sept'ber 26, 1:30 P.M.	Bldg. 3 barracks, mess hall and addition to hospital.....	B. A. Benson, Treasurer.
California.....	Riverside.....	September 26, 2 P.M.	Erecting cottages, stable, mess hall, etc., all brick.....	Harvard Hall, Supt. Ind. School.
Iowa.....	Muscatine.....	September 26, 2 P.M.	Furn. material and erecting, complete, fireproof Court House.....	Jos. E. Mills, Detroit, Mich., Arch.
South Dakota.....	Brookings.....	September 26.....	Erecting law building at Vermillion and ladies' dormitory at Brookings; each to cost \$40,000.....	Irwin D. Aldrich, Sioux Falls.
Pennsylvania.....	Pittsburg.....	September 27, 2 P.M.	Constructing \$800,000 stone building, Co. Soldiers' Memorial.....	J. G. Chalfant, County Engineer.
Colorado.....	Hesperus.....	September 27.....	Erecting school, office, moving bldg., imp. water system, etc.....	J. S. Spear, Supt. Ft. Lewis School.
New York.....	West Haverstraw.....	September 30, noon.....	Heating, plumbing, etc., open air pavilion, N. Y. State Hospital.....	Rev. H. C. Potter, Pres. Bd. M'g's.
Alabama.....	Selma.....	September 30, 3 P.M.	Erecting, complete, U. S. Post Office.....	James Knox Taylor, Wash., D. C.
Wisconsin.....	Eau Claire.....	October 1, 3 P.M.	Erecting, complete, Federal Building.....	James Knox Taylor, Wash., D. C.
Maine.....	Portland.....	October 1.....	Plumbing the County Building.....	Geo. Burnham, Architect.
North Dakota.....	La Moure.....	October 3, 10 A.M.	Plans and specifications for Court House, \$60,000 to \$100,000.....	E. W. Field, County Auditor.
New Jersey.....	Bayonne.....	October 3, 8:30 P.M.	Constructing public school No. 9.....	A. C. Longyear, N. Y. City, Arch.
Louisiana.....	New Orleans.....	October 5.....	Hot water heating plant at Naval Station; cost, \$25,000.....	Commandant.
Wisconsin.....	De Pere.....	October 5.....	Plans for 3-story and basement Court House and 2-story basement jail, fireproof, complete; cost, \$300,000.....	Special Bldg. Com. County Board.
Maryland.....	Baltimore.....	October 7, 3 P.M.	Erecting and mechanical equipment, Federal Building.....	James Knox Taylor, Wash., D. C.
Arizona.....	Whipple Bar'cks.....	October 12, 10 A.M.	Constructing a post hospital.....	Capt. Chas. C. Walcutt, Jr.
California.....	San Diego.....	October 14, 7:30 P.M.	Erecting brick or rein. concrete school building, 16 rooms.....	H. L. Gay, Architect.
Wisconsin.....	Green Bay.....	October 15, noon.....	Erecting Court House, County jail and Sheriff's residence of stone and brick; to cost \$300,000.....	E. S. Hall, County Clerk.
Ohio.....	Springfield.....	October 16, 3 P.M.	Erecting, complete, U. S. Post Office.....	James Knox Taylor, Wash., D. C.
Illinois.....	Peoria.....	October 17, 3 P.M.	Erecting extension and remodeling Federal Building.....	James Knox Taylor, Wash., D. C.
Alabama.....	Montevallo.....	October 18.....	Plumbing, steam heating, etc., addition Girls' Industrial School.....	Wm. Ernest Spink, Birmingham.
Iowa.....	Des Moines.....	October 21, 3 P.M.	Erecting, complete, Federal Building.....	James Knox Taylor, Wash., D. C.
Texas.....	Houston.....	November 5.....	Plans and specifications for \$500,000 fireproof Court House.....	Geo. F. Horton, County Engineer.

Bridges

Ohio.....	Cincinnati.....	September 20, noon.....	Reconstructing, etc., structural steel work, Liberty St. viaduct.....	C. N. Danenhowe, Chief Eng'r.
Pennsylvania.....	Lancaster.....	September 20.....	Constructing stone twin-arch bridge over Hammer Creek.....	M. G. Schaeffer, Co. Comptroller.
Colorado.....	Greeley.....	September 20.....	Erecting reinforced concrete bridge, 135 ft. long.....	G. Houston, Denver, Dep. St. Eng'r.
Ohio.....	Tiffin.....	September 20.....	Repairing Perry St. bridge, to cost \$7,500.....	County Commissioners.
Ohio.....	Newark.....	September 23.....	Erecting 105-ft. span riveted steel truss bridge.....	J. L. Gilpatrick, County Auditor.
Michigan.....	Bay City.....	September 23.....	Dredging or otherwise constructing 50,000 cu. yd. embankment, forming south approach to Belinda St. Bridge.....	John H. Bloomfield, Eng'r Bridge Com.
Colorado.....	Alamosa.....	September 24.....	Erecting, complete, wing walls for reinforced concrete bridge.....	T. W. Jaycox, Denver, State Eng'r.
California.....	Oakland.....	September 30, noon.....	Painting government bridges over Oakland Harbor.....	Col. John Biddle, U. S. Engineers.
Chile, So. A.....	Santiago.....	September 30.....	Erecting several bridges in Chile.....	Wessel, Duval & Co., N. Y. City.
Oklahoma.....	Guthrie.....	September 31.....	Erecting bridge, Cimarron River, Dist. No. 31, Lawrie twp.....	County Commissioners.
Minnesota.....	Fergus Falls.....	October 3, 8 P.M.	Erecting steel or concrete bridge over Red River.....	G. H. Gard, City Clerk.
Ohio.....	Niles.....	October 7, 1 P.M.	Laying wood block on plank base, Main St. County bridge.....	County Commissioners.
Indiana.....	Salem.....	October 7, 1:30 P.M.	Constructing steel bridge and stone abutments.....	J. G. Ellis, Co. Auditor.
Florida.....	Palatka.....	October 9.....	Erecting \$90,000 bridge over St. John's River.....	R. R. Price, County Engineer.
California.....	Los Angeles.....	October 14, 11 A.M.	Erecting reinforced concrete bridge over Los Angeles River at 7th St., 318 ft. long, 20 ft. wide, contain. 5,440 cu. yds. cement.....	H. G. Parker, Bridge Engineer.
New Brunswick.....	Fredericton.....	October 14.....	Constructing metal span of Cocagne Mouth Bridge, Kent Co.....	C. H. La Billois, Chm. Com'n.
Manitoba.....	Dunrea.....	October 15, noon.....	Constructing steel bridge, two 100-ft. spans, on concrete and boulder masonry foundation over Souris River.....	J. H. Putnam, Mun. Riverside.
China.....	Canton.....	October 19.....	Constructing steel cantilever and girder bridge, 1,102 ft. long, in Front Reach, 740 ft. west of Dutch-folly Fort.....	Canton River Bridge Co., Ltd.

Lighting and Electricity

Illinois.....	Caicago.....	September 20, 11 A.M.	Furn. 125 miles No. 6 B. & S. gauge copper-line wire.....	Wm. Carroll, City Electrician.
Pennsylvania.....	Lancaster.....	September 20.....	Erecting power plant, etc., Stevens Industrial School.....	Walter A. Miller, Clk. Com'n.
Missouri.....	St. Louis.....	September 20.....	Furn. and installing 2 engines, 2 generators, switchboard, etc., steam fixtures, boilers, furnaces, etc., in Quarantine Hospital.....	A. J. O'Reilly, Pres. Bd. Pub. Imp.
New Hampshire.....	Portsmouth.....	September 21, 11 A.M.	Erecting extension to power house at navy yard.....	Commanding officer.
New York.....	New York.....	September 23, 11 A.M.	Installing electric equipment, etc., school buildings.....	C. B. J. Snyder, Supt. School Bldgs.
West Virginia.....	Elkins.....	September 23.....	Electric and gas fixtures for new Court House.....	Lee Crouch, Clk. Co. Court.
Virginia.....	Manassas.....	September 28.....	Constructing electric light plant, waterworks, etc.....	O. E. Newman, Chm. Com.
New York.....	Rochester.....	September 30, 10 A.M.	Furn. and installing 150 h.p., 130-lb. pressure internal furnace boiler in Co. power house; also electric lighting plant in basement of Court House.....	G. L. Meade, Chm. Co. Com'r.
New York.....	West Point.....	September 30, noon.....	Furn. and installing combination gas and electric light fixtures, etc., old and new Cadet barracks.....	Maj. J. M. Carson, Q. M., U. S. A.

Lighting and Electricity—Continued.

Connecticut....	New London....	September 30, noon..	Furnishing 40 25-k. w. generating sets, complete.....	Maj. Harry Taylor, Eng'r Corps.
New York....	West Haverstraw....	September 30, noon..	Electric work, etc., open-air pavilion, N. Y. State Hospital....	G. L. Heins, Albany, Architect.
Brit. Columbia....	Revelstoke....	September 30, 6 P.M..	Enlarging hydro-electric plant, inc. 500 h. p. producer gas plant and engines, generators and excitors, transmission machinery, switchboards, wiring and rearrangement of present plant....	Cecil Goddard, Winnipeg, Cons. Engr.
Manitoba....	Winnipeg....	October 1, noon....	Constructing general works and supply of equipment for hydro-electric station at Point du Bois....	Chairman Board of Control.
Florida....	Jacksonville....	October 4, noon....	Furnishing and setting up 1,500 k. w. steam turbo-generator, 50 k. w. motor driven exciter....	R. N. Ellis, Supt. Light Plant.
Alabama....	Montevallo....	October 18....	Electric wiring, plumbing, etc., addition Girls' Indus. School....	Wm. E. Spink, Birmingham, Arch.
Indiana....	Seymour....	November 1....	Furnishing gas for light and fuel and electricity for light and power....	Fred Everback, City Clerk.
South Carolina....	Charleston....	November 15, noon..	Lighting sts. and public bldgs., 1, 2 or 4 yrs., inc. 500 arc. lights or equivalent in 5 ft. gas burners....	Ion Simons, City Electrician.
India....	Calcutta....	December 31....	Lighting town by electricity, gas, oil, or other method; now lighted by 9,300 gas lamps of 24 c.p. and 2,400 c.p. oil lamps....	Municipal Council.

Miscellaneous

Missouri....	Kansas City....	September 10, 11 A.M.	Planting trees....	E. A. Harper, City Engineer.
New York....	New York....	September 10, 3 P.M..	Furnishing 200 bbls. Portland cement, No. 1, 1907....	Moses Herrman, Park Dep't.
Louisiana....	New Orleans....	September 20....	Constructing 25,000 cu. yds. Lake Borgne Levee District....	Capt. J. F. McIndoe, Eng'r Corps.
Illinois....	Chicago....	September 21, 10 A.M.	Constructing wire and concrete fence around playground....	A. W. O'Neill, Sec'y Spec'l P'k Com.
New York....	New York....	September 23, 11 A.M.	Erecting grand-stand, athletic field at Astoria....	C. B. J. Snyder, Bd. Education.
New Jersey....	Newark....	Sept. 26, 3:30 P.M..	Removal garbage, etc., 5 yrs., from Jan. 1, 1908....	M. R. Sherrard, City Engineer.
California....	San Francisco....	September 28, 10 A.M.	Constructing torpedo wharf at Fort Winfield Scott....	Capt. B. F. Cheatham, O. M.
Massachusetts....	Boston....	September 30....	Dredging in Mystic River....	Maj. Edw. Burr, Eng'r Corps.
New Jersey....	Cold Spring....	October 3....	Constructing stone jetties, Cold Spring Inlet....	Maj. C. A. F. Flagler, Wilm't'n, Del.
Ohio....	Toledo....	October 7, 10 A.M..	Constructing riprap stone wall along east side of fill crossing Mud Creek, north of Casino, Washington township....	L. B. Bailey, Chm. Co. Comrs.
California....	Los Angeles....	October 7....	Cement-making machinery for Aqueduct, Specification No. 6....	W. R. Ormsby, Act. Pur. Agent.
Alabama....	Riverton....	October 12, 11 A.M..	Excavation, riprap and paving at Colbert Shoals Canal....	Maj. Wm. W. Harts, Eng'r Corps.

STREET IMPROVEMENTS

Birmingham, Ala.—The Board of Revenue has granted the petition for the construction of a road from Flint Hill church, in Precinct 1, on the Fourth avenue road, in nearly a straight line to Pleasant Hill church, on the Eastern Valley road.

Decatur, Ala.—Council has decided to build two additional miles of concrete walks.

Oakland, Cal.—The City Engineer has been authorized to prepare plans for the repair of Webster street pier, for which work \$2,500 has been appropriated. The Ransome Construction Company has been granted permission to grade, curb and macadamize Applegate street, between Market and West streets, and J. A. Clark granted permission to grade, curb, macadamize and sewer Sixty-sixth street, from Raymond to Fairview street.

Council has adopted the following resolutions of intention: To open Boyd avenue between Summer and Hudson streets; to grade, curb and macadamize Powell street from Stanford avenue to the city line; to grade, curb and macadamize Sixty-second street from San Pablo avenue to the city line; to grade, curb and macadamize Sixty-first street from San Pablo avenue to the city line; to grade, curb and macadamize Fremont street between Fifty-fifth and Fifty-second streets; to grade, curb and macadamize Fifty-fifth street from San Pablo avenue to the city line; to sidewalk Moss avenue from Piedmont avenue to Broadway; to sewer Fourteenth street from Jefferson to Grove streets; to sewer East Sixteenth street from Sixth avenue to Seventh avenue; to sewer East Fourteenth street from Fourteenth avenue to Fifteenth avenue; to sewer Franklin street from Piedmont avenue to the Richmond boulevard; to grade, curb and macadamize Opal street from Thirty-eighth to Fortieth streets.

Canaan, Conn.—The appropriation of \$20,000 for highway improvements has been voted upon favorably by the citizens.

Deep River, Conn.—The Town Board is preparing to expend \$20,000 in road improvements.

Aurora, Ill.—The Board of Public Works has directed certain portions of South River street to be paved with brick.

Fort Wayne, Ind.—Resolutions have been passed for cement walks on the west side of Beaver avenue, from Home to Packard, and for the paving, with brick, of Knitters avenue, from Main street to lot 18, Lombard's Park addition.

Michigan City, Ind.—City Engineer H. M. Miles estimates that the proposed new sidewalks will cost \$2,460.

Davenport, Ia.—Council has ordered the preparation of plans and estimates of cost for paving Second street.

Hyattsville, Ind.—Johnson avenue will be macadamized, at a cost of \$1,500; other streets will soon be improved.—J. Fainter, Acting Mayor.

Lexington, Ky.—Macadam pavement will be constructed on Washington avenue, and grades improved.

Holyoke, Mass.—City Engineer Tighe estimates the cost of the proposed Canal street subway would be \$58,685.

St. Joseph, Mo.—Out-of-town contractors will be invited to bid on contracts for 50,000 square yards of brick paving, as the Phoenix

Brick and Construction Company recently threw up the job on Mitchell avenue, and other local concerns have failed to accept contracts awarded them.

Camden, N. J.—Council has passed an ordinance authorizing the issue of \$150,000 street bonds.

Trenton, N. J.—Council has passed resolutions to resurface several streets, and pave Second street with sheet asphalt.

Rochester, N. Y.—Council proposes to resurface Cumberland street with trap rock and reset Medina stone curb and cobblestone gutters; estimated cost, \$6,000; to construct a 5-foot Portland cement walk on Maplewood avenue, estimated cost \$1,500; to construct 3-foot Portland cement walk on Blakeney place, estimated cost \$100; and to extend Woodbine and Normandy avenues.

Schenectady, N. Y.—Ordinances have been passed directing grading, curbing, paving and sidewalks on several streets.

Salisbury, N. C.—An election will be held to decide the question of issuing \$30,000 bonds for street improvements.—Address City Clerk.

Akron, O.—Sherman street will be paved with brick, on sand, with tar filler, stone curbing, grading, etc.—Charles W. Kempel, Mayor.

Batavia, O.—Bids will be opened, October 7, for \$5,721 semi-annual 4 per cent. bonds, for constructing cement sidewalks.—G. H. Hain, Village Clerk.

Bellefontaine, O.—E. F. Chamberlain states that the petition for paving South Main street will be favorably acted on; City Engineer Cushing will prepare plans; brick with concrete foundation and stone curbing will be used.

Celina, O.—Bids will be received, September 21, for \$12,800 Miller county pike bonds; also \$8,000 and \$14,000 pike bonds; interest, 4½ per cent.—T. A. Weiss, County Auditor.

Cleves, O.—Bids will be received, October 7, for \$2,500 bonds for improving Miami avenue, State and Howell, and other streets.—D. W. Gwaltney, Village Clerk.

Dayton, O.—The City Engineer has submitted plans for the sidewalking of the east side of Orchard street, from Third to Coates, and estimates the cost at 11 cents per square foot; plans and estimates are being made for paving three streets, and various alleys; also for storm water sewer on Findlay street.—Robert Kline, City Engineer.

Greensville, O.—Bids will be received, September 26, for \$45,000 road improvement bonds.—E. Culbertson, County Auditor.

Lima, O.—Council has authorized about a mile of new paving, including Second and Main streets; bids will be advertised at once.

Lorain, O.—An ordinance has been passed authorizing an issue of \$24,000 bonds for paving Vine street.

Urbana, O.—Council has passed ordinances for the laying of cement walks, concrete curbs, and gutters on various streets.

Wellsville, O.—The resolution for paving Fourteenth street has passed on its final reading.

Allentown, Pa.—Councils have passed an ordinance for paving Fifteenth street; bids for walks at the Eleventh Ward building will be advertised for by the Board of Control.

Butler, Pa.—Center avenue will be paved to the width of 30 feet; the paving of Water

street will be passed on by the Paving Committee.—Borough President Dunn.

Harrisburg, Pa.—Eighteenth street, from Market to Walnut, will be opened and graded.

Hazleton, Pa.—An ordinance has been passed providing for the paving of Spruce alley, at a cost of \$5,000.

Reading, Pa.—Council has authorized street work as follows: Fill up and place in passable condition Spruce street; place catch basin at the northeast corner of Fourth and Spruce streets; repair asphalt paving on Ninth street; relay pavements on north side of Cotton street; spall and roll Third street, and treat the same to a coat of Tarvia; pave intersection of Tenth and Elm streets; repair gutter east side of Tenth street; construct brick gutters on east side of Mulberry street; construct brick crossing at Ninth and Union streets; construct brick crossing at corner of west side of Moss and Pike streets. Resolutions have been passed to repair North Sixth street at the round house, and to spall and roll and treat Greenwich street with a coat of Tarvia; crossings will be laid on McKnight, and on Greenwich streets; and gutters will be constructed on several streets. The Board of Public Works will advertise for bids for paving Cotton street, between Ninth and Tenth streets.

Providence, R. I.—A resolution has been adopted by the Board of Aldermen to ask Council to appropriate an additional \$14,000 to facilitate improvements on Waterman and Angel streets.

Andersonville, Tenn.—Bids will be received, October 5, for the purchase of \$100,000 Anderson county pike road bonds.—J. K. P. Wallace, Chairman.

Dallas, Tex.—Bids will be asked for paving Bryan street, on specifications including asphalt, bitulithic, brick, wooden blocks and Bois d'Arc blocks, all on concrete base; a resolution has been adopted to pave 600 lineal feet of Forest avenue, with bitulithic.

Ft. Worth, Tex.—Property holders will petition the City Commission to pave South Main street and Magnolia street; the City Commissioners have decided to pave certain portions of Seventh street.

Houston, Tex.—The County Board will offer for sale \$500,000 4 per cent. 40-year county road bonds, optional after ten years.—A. F. Annerman, County Judge.

Marshall, Tex.—John W. Maxcy, of Houston, has been engaged as consulting engineer for street paving and sidewalk construction; the cost of the work to be done will be about \$200,000, which has been voted in bonds by the city.

Palestine, Tex.—The Attorney General has authorized an issue of \$50,000 bonds for street improvements.

Salt Lake City, Utah.—City Engineer Kelsey estimates that the cost of resurfacing with asphalt, from Brigham to Fourth South street, and substituting asphalt for the present cobblestone curb and gutters and the section between the car tracks, to be \$32,000, or \$12 per running foot.

Petersburg, Va.—Council has adopted a resolution to pave the roadway of Washington street with vitrified block, cost to be \$5,700.

Superior, Wis.—The Board of Public Works will receive bids for paving certain portions of Winter street.

SEWERAGE

Oakland, Cal.—The Board of Public Works has directed the City Engineer to prepare and submit plans and specifications for constructing the extension of the East Side sewer as far southerly as First street; also to prepare resolutions of intention to sewer Jefferson, Grove, Castro and Brush streets, from Second street to Thirteenth or Fourteenth street; the Board has also directed the construction of catch basins for draining streets north of B street and west of Thirty-sixth street. All bids received for sewerage Eleventh street, between Jefferson and Clay streets, have been rejected, and the Clerk of Council has been directed to readvertise for bids.

Oroville, Cal.—The matter of issuing \$10,000 sewer bonds will be submitted to a vote of the people.

Pasadena, Cal.—The cost of an additional sewer on Allen avenue and connection with the Lake avenue outfall sewer is estimated at \$50,000.—S. J. Van Ornum, City Engineer.

Davenport, Ia.—Council has ordered a storm drain built on Howell street; estimated cost, \$500.

Lexington, Ky.—It is proposed to construct public sanitary sewers on South Broadway, near the old city limits, on South Broadway Park, and on Clay avenue.

Malden, Mass.—The Finance Committee is considering application for \$20,000 appropriation for the construction of sewers.

Ann Arbor, Mich.—The Board of Public Works has directed estimates to be prepared for construction of sewers in certain streets.—Address City Clerk.

Houghton, Mich.—Council has directed sewers to be constructed in certain portions of Clark street.

Lewiston, Mont.—Bonds, \$15,000, will be issued for sewerage system, to run 20 years, at 5 per cent. interest, payable semi-annually.

Orange, N. J.—The City Sewerage Commission has directed plans to be prepared for the establishment of a sewer system.

Trenton, N. J.—Council has passed ordinances to construct sewer No. 369 in Cherry street, No. 390 in Stuyvesant avenue, and No. 394 in West State street; notice of intention to construct the following will be advertised: Sewer No. 394, in West State street from Hermitage avenue to Colonial avenue; sewer 386, Franklin street from between Emory and Morris avenues to Roebeling avenue; No. 274, in Franklin street from between Emory and Morris avenues to Liberty street; sewer No. 381, in North Clinton avenue, from Model avenue to Lincoln avenue.

Poughkeepsie, N. Y.—The Board of Public Works will advertise for bids for pipe, and also for the construction of the Corlies avenue sewer.

Rochester, N. Y.—Council proposes to construct sewers on a number of streets and avenues in the Driving Park tract, estimated cost \$33,000; Long street, estimated cost \$1,000; Jennings street, estimated cost \$700, and Main street, East, estimated cost \$900.

Akron, O.—Bonds, \$14,200, have been issued to pay the city's part of constructing sewer with a filter bed appurtenant thereto in Bailey avenue and other streets.—Charles W. Kempel, Mayor.

Batavia, O.—Bids will be received, October 7, for the purchase of \$5,725 sewer bonds.—G. H. Kain, Clerk.

Dayton, O.—It is estimated that the cost of the proposed sewer in District No. 1 is \$2,216 and in District No. 4 \$14,355.

Fostoria, O.—The construction of a 7-inch tile sewer in Cleveland street has passed its final reading.

Jackson, O.—Council has voted \$1,500 bonds for the construction of a main sewer.

Lima, O.—Council has authorized the construction of a sewer in Binglebine avenue.

Lorain, O.—A number of sewer ordinances have passed Council calling for the construction of sewers in South Lorain, bids on which are to be invited as soon as plans are prepared.

Springfield, O.—Bids will be received, September 24, for the purchase of \$68,600 sewer bonds, city's share; interest 4½ per cent.—L. M. Harris, City Auditor.

Xenia, O.—City Engineer Netts estimates the cost of a sewer on East Second street at \$1,700 and the improvement will be authorized.

Allentown, Pa.—The Mayor has been directed by Council to ask for bids to build a sewer on Liberty street, eastward from the L. V. R. R. Company tracks.

Butler, Pa.—The construction of three new storm sewers in the West End District is regarded as an absolute necessity and Council will be asked to authorize this improvement at once.

Hazleton, Pa.—Council has passed an ordinance appropriating \$600 for the construction of a terra-cotta pipe sewer on West Green street.

York, Pa.—It is estimated that all the sewer work to be done within the city limits will cost \$79,000.

Palestine, Tex.—The Attorney General has approved an issue of \$50,000 bonds for sewer purposes.

M'Mechen, W. Va.—Bonds, \$25,000, have been voted for the construction of a sewer system.

WATER SUPPLY

Montrose, Col.—Council has purchased site for reservoir; the work will commence at once.

Covington, Ga.—The citizens have voted \$60,000 bonds for putting in a water system and for the construction of sewers.

Jackson, Ga.—Council has directed estimates to be prepared for extending water system, at a cost of \$10,000; an election will be held to vote on the question of issuing \$10,000 bonds for the purpose.—Address Clerk of the Board.

Pavo, Ga.—Bonds, \$6,000, have been voted for water works purposes.—Address Clerk of the Board.

Bellville, Ill.—William Tunny has been awarded contract at \$15,000 in connection with a \$200,000 plant to be installed by the Bellville Deep-Well Water Co.; his contract calls for the laying of about seven miles of mains.

Joliet, Ill.—The cost of the proposed water mains of nine streets is estimated to be \$22,894.

Chickasha, I. T.—Council has granted the water power company a franchise to do business in the city for twenty-five years; the company is to furnish the city fifty street lights at the rate of \$5.25 per light; the city is now paying \$3 per month on each street light; the rates of the new company to individuals are considerably less than those prevailing at the present.

Newport, Ky.—Another water main will probably be constructed from the reservoir to the plant of the Dorsel Flour Milling Co., which was recently damaged by fire.

Hyattsville, Md.—Property owners will probably be compelled to install meters to prevent wanton waste of water.—J. Fainter, Acting Mayor.

Vernon Center, Minn.—Bids will be received, September 20, for the purchase of \$8,000 5 per cent. water works bonds.—T. A. Joseph, Recorder.

Passaic, N. J.—The question of condemning the Acquackanonk Water Company's mains will be voted on by the citizens.

Cazenovia, N. Y.—No award was made for supplying 5,400 feet 4-inch cast-iron pipe; 10 hydrants, 400 valves, etc.—Geo. W. Salisbury, Water Commissioner.

Ashtabula, O.—W. S. McKinnon, newly elected President of the Ashtabula Water Works Company, states that very extensive improvements to the property will be made, the nature of which are now being worked out.

Columbus, O.—Bids for laying water mains from the filtration plant to the city distribution have been rejected; the lowest bid being \$170,000.

Galion, O.—Council has passed resolution to bond the town for \$100,000 for the erection of a water works plant; no action has been taken for sewerage improvements.

Guthrie, Okla.—Bonds, \$40,000, have been voted for the extension of a water system.

Altoona, Pa.—Ordinances have been passed to lay water mains on three streets, build two sewers, and pave seven streets.

Reading, Pa.—Council has received a favorable recommendation on the bill providing for a special election to vote for a proposed loan to increase the indebtedness of the city to the extent of \$500,000 to complete the filtration of the city's water supply.

A resolution has been passed that the Water Board lay 220 feet of water main on Fifteenth street, between Cotton and Fairview streets; lay water main on Centre avenue, between Robeson and Perry streets; lay water main on Birch street, between Windsor and Spring streets.

Seneca, S. C.—Bonds have been voted for establishing water plant.

Amarillo, Tex.—An election will be held to decide whether the city shall bond itself for \$80,000 to purchase the present water works and operate same or to build a new system; the present company is owned by outside capitalists.

Beaumont, Tex.—The Beaumont Water Works Company has authorized an issue of \$250,000 bonds for improving system.

Pennsboro, W. Va.—Bids will be received, September 30, for the purchase of \$12,000 6

per cent. water works bonds.—J. K. B. Woodell, Mayor.

Union, W. Va.—Bonds, \$5,500, will be authorized for the construction of a system of water works.

De Pere, Wis.—Council has decided to make the following extensions of mains: a 426-foot extension on a 6-inch main on the Wells dock property; estimated cost, \$516; a 2,934-foot extension on the 8-inch main for Main avenue over various streets to the Lyons Boiler Works plant to furnish protection to that plant in case of fire; estimated cost, \$3,752; an 840-foot extension on the 10-inch main on Broadway, and 327 feet of 8-inch main on Lewis street, estimated cost, \$1,595; total cost about \$6,000; bonds will be issued.

Madison, Wis.—The Municipal Water Works Company will build a six million gallon reservoir and make other improvements to the water plant; estimated cost of improvements, \$30,000.

LIGHTING AND ELECTRICITY

Hot Springs, Ark.—The Consumers Electric Company recently organized for the purpose of establishing and maintaining a power system to furnish service to those portions of the city not supplied by the Hot Springs Water Company.

Ozark, Ark.—The electric light company is now fully organized; the stockholders elected the following Directors: A. Bueglar, Alfred Sax, John J. Sax, and others; A. Bueglar, President; Harley Russell, Secretary.

Evansville, Ind.—The County Board has directed estimates to be prepared for lighting the county infirmary with electricity.

Vincennes, Ind.—The Board of Works has signed a contract with C. B. Shaffer, of Pittsburgh, which includes a franchise to pipe natural gas to this city.

Chickasha, I. T.—The Chickasha Water Power Company is arranging to construct dam and purchase electric machinery to transmit electricity.—Lawrence Martus, Treasurer.

Covington, Ky.—A meeting of the Committees on Light will be held to discuss the installation of electric lights in the recently annexed territory of Central Covington.

New Bedford, Mass.—Bids will be advertised for lighting the streets for not less than one nor more than five years; terms are asked for furnishing arc and incandescent lights, gas lamps and self-generating naphtha gas lamps.—Charles Ashley, Mayor.

Taunton, Mass.—No bids were received for \$45,000 4 per cent. 30-year bonds for increasing the capacity of the municipal light plant made necessary by the growth in the demand for power for commercial purposes.

Duluth, Minn.—The city is contemplating the purchase of the Prindle Gas Company at \$8,500.

Oxford, Miss.—Electric lighting plant at University of Mississippi burned; loss, \$10,000; insurance, \$10,000; it will probably be rebuilt.

Maryville, Mo.—The municipal election held to determine whether or not the city should grant the Maryville Electric Light & Power Company a 20-year franchise carried by a majority of 435; the contract empowering the city to contract for street lighting for a period of five years also carried by 90 votes more than the necessary two-thirds.

Windsor, Mo.—The plant and franchise of the Windsor Electric Light and Power Company have been sold to Messrs. Carver and Roberts, of Neosho, Mo., and Canyon City, Tex., respectively, for \$8,200.

Bucyrus, O.—Mr. Froelich, an Electrical Engineer, has estimated the cost of an electric lighting plant at about \$75,000; Council will take up the question of this improvement at once.

Cleveland, O.—The School Board will equip the Milford school house with an electric plant.

Rawson, O.—The question of municipal lighting is being agitated.

Troy, O.—Bids will be received, September 30, for purchase of \$28,000 electric lighting bonds.—Chas. F. Rannels, City Auditor.

Lancaster, Pa.—The Lancaster, Oxford & Southern Railway Company has decided to use electricity as a motive power; the change will be made when the power dam at McCall's Ferry is completed.—Walter M. Franklin, President.

Seneca, S. C.—Council has under consideration the matter of establishing an electric light plant.

Memphis, Tenn.—Council is investigating cost of establishing a municipal lighting plant.—Address J. S. Dunscomb.

Amarillo, Tex.—The citizens will vote on the question of issuing bonds for a municipal light and water plant.

Handley, Tex.—Northern Texas Traction Company, H. T. Edgar, General Manager, Fort Worth, will double capacity of power house, expending about \$150,000.

FIRE EQUIPMENT

Roseville, Cal.—The citizens have decided to organize a Fire Department and purchase two hose carts.

Davenport, Ia.—Council has ordered that bids be called for to pave inside of fire houses No. 1 and No. 6.

Topeka, Kan.—The State Board has decided to purchase hose and chemical extinguishers for the Industrial School, at Beloit, and for the Industrial School, at Topeka.

New Orleans, La.—A bond issue of \$200,000 is proposed by the Louisiana Fire Prevention Bureau in aid of the project to extend the Fire Department service to unprotected portions in the rear of the city.

Malden, Mass.—The Fire Commissioners have asked for an appropriation of \$800 for furnishing and equipping the new Linden fire station.

Grand Forks, N. D.—Bids will be advertised for by the Auditor for the erection of the proposed new two-story fire station, to be of brick, front of Hebron pressed brick; estimated cost, \$12,000.—W. J. Edwards, architect.

Lorain, O.—The Mayor recommends the purchase of two fire engines.

Van Wert, O.—Bids will be received, September 20, for the purchase of \$1,500 4 per cent. 5-year engine house bonds.—H. C. Rudup, City Auditor.

Pittsburg, Pa.—Council has passed an ordinance setting new limits within which fireproof building must be constructed; it includes within the limits every business district in the city.—Geo. W. Guthrie, Mayor.

Milwaukee, Wis.—The Fire Chief recommends the erection of a hose tower at engine house No. 11.

PUBLIC BUILDINGS

Bridgeport, Conn.—Bids will be asked shortly for the erection of a brick barn for the Emergency Hospital ambulance and horse, and the police patrol wagons and horses.

Halleyville, I. T.—Bonds, \$10,000, have been authorized for school purposes.—Address Clerk of the Board.

Waterville, Minn.—The citizens will vote on the question of issuing \$20,000 bonds for the erection of high school.—Address Clerk of the Board.

Bloomfield, Mo.—Council has authorized issue of \$4,000 5 per cent. school bonds.

Newburgh, N. Y.—Council has authorized the sale of \$80,000 school bonds.

Bladenboro, N. C.—The citizens have voted \$5,000 school bonds.—Address Clerk of the Board.

Elizabeth City, N. C.—Bids will be received, October 1, for the purchase of \$20,000 40-year 5 per cent. school bonds.—D. D. Bradford, Treasurer.

Mocksville, N. C.—Bids will be received, October 1, for the purchase of \$5,000 5 per cent. school bonds.—A. M. McGlamery, Mayor.

Cincinnati, O.—The Board of Education has decided to advertise for bids for \$250,000 school bonds.—Address Clerk of the Board.

Dayton, O.—Council has passed an ordinance to issue \$8,000 for the erection of a new station house.

Houston, O.—Bids will be received, September 27, for the purchase of \$640,000 school bonds.—W. T. Jaines, Clerk of the Board.

Glassport, Pa.—The Borough Council has \$50,000 school bonds for sale.

Pittsburg, Pa.—Council is considering a bond issue of \$150,000 to be used in repairs, extensions and improvements at the City Home at Marshalsea.

Lane, S. D.—The citizens have voted bonds for the erection of school house.—Address Clerk of the Board.

Bellevue, Tex.—The Attorney General has approved an issue of \$12,000 school bonds.

Hallettsville, Tex.—The School Board has decided to issue \$20,000 bonds.—Address City Clerk.

Hawley, Tex.—The citizens have voted \$10,000 bonds for the construction of school house.—Address Clerk of the Board.

Bremerton, Wash.—The citizens of Charleston and Bremerton have voted \$20,000 bonds for building school.—Address Clerk of the Board.

Beloit, Wis.—The School Electors have voted to expend \$130,000 for the construction of a new Beloit high school.

STREET RAILWAYS

Woodland, Cal.—The Northern Electric Railway Company has petitioned Council for franchise to operate an electric railway.

Wilmington, Del.—The Wilmington Street Railway Companies have accepted the conditions of the Street and Sewer Department that they pave the streets from curb to curb where they lay tracks, and the franchises for extensions have been granted.

Schenectady, N. Y.—The Board of Estimate and Apportionment has granted to the Schenectady Railway Company franchise for double tracking Edison avenue.

Detroit, Mich.—Council has passed a resolution to provide for a new crosstown railway to connect with the Springwells plug line, to be about six miles in length.

Butte, Mont.—The Board of Trade proposes to build an electric railway from Red Lodge to the Bear creek coal mining camp.

Red Lodge, Mont.—A meeting of the Board of Trade was held to take steps toward the building of an electric railway from Red Lodge to the Bear Creek Coal Mining camp, four miles away; the Board voted to secure an electrical engineer to ascertain the grade necessary and to make an estimate of the cost; M. B. Rodgers is promoting the matter.

North Ft. Worth, Tex.—The contract has been signed by the North Fort Worth Committee which assures the interurban railway between Fort Worth and Mineral Wells via Springtown.

BRIDGES

Ozan, Ark.—County Judge W. A. Briant and Road and Bridge Commissioner J. M. Crosnoe, of Hope, were here viewing the old bridge over Middle Ozan, one mile north of town, and decided to replace it with a modern steel bridge.—Washington c.h., Hempstead County.

Jeffersonville, Ind.—The County Council appropriated \$3,500 for a bridge at Phillip's ford and \$2,000 for a bridge at New Providence.

Farmer, Ky.—There is a project on foot to build a much needed new steel bridge over Licking river at this place; part of the money is being raised by private subscriptions, and the Fiscal Courts of Bath and Rowan counties will be asked to subscribe \$1,000 each, as that amount will be required to complete the bridge.—Rowan County Commissioner Morehead.

New Orleans, La.—Council has received report from Bridge Commissioner Smith stating that bridges at Liberty street and Magnolia street are in dangerous condition.

Shreveport, La.—Ira G. Hedrick, of Kansas City, who has been employed by the city to serve as Consulting Engineer in the work of constructing a traffic bridge across Red river, has submitted to the Bridge Committee drawings of two bridges, one to span the river at Texas street would be 1,900 feet long and a plan for the Lake street bridge calls for a structure 1,300 feet in length.

Hyattsville, Md.—The town authorities will construct an approach to the proposed bridge over the northwest branch, at the foot of Highland avenue, to connect the towns of Hyattsville and Brentwood, which structure is to be built by the Commissioners of Prince George County.—J. Fainter, Acting Mayor.

Fergus Falls, Minn.—A special election will be held to issue bonds to build a steel bridge to replace the structure that sunk into the river September 3.

Mt. Holly, N. J.—The Burlington & Mercer County Commissioners have decided to share the expense of building bridge across Crosswater creek.

Springfield, O.—Bids will be received, September 23, for the purchase of \$2,400 Clark county bridge bonds.—H. G. Wraight, Commissioner.

Wilkes-Barre, Pa.—Patrick Gallagher has been awarded contract for construction of a concrete bridge on the lower end of Ashley street over Sulphur creek at \$329.

Providence, R. I.—Council has appropriated \$6,000 for paving Court street bridge with wood blocks.

Spokane, Wash.—Bids will be received, September 25, for the purchase of \$400,000 bridge bonds.—Robert Fairley, Comptroller.

Hazel Green, Wis.—The Town Board recently viewed sites and is having specifications prepared for letting two bridge contracts, one 72-foot span and one 50-foot span, each 12-foot roadway.—Jos. Larkin, Chairman; D. S. York, Town Clerk.

Marinette, Wis.—The bridge across the Menominee river at the paper mill has been ordered closed; the recommendation of the committee was to the effect that a new bridge ought to be built and that it ought to be strung across the river below the mill, at the foot of Hattie street; it was also the opinion of the committee that a bridge should be built at the same time across the river from the Witbeck Island.

Racine, Wis.—The Park Board has petitioned Council to build a cement bridge instead of iron bridge; estimated cost, \$20,000.

MISCELLANEOUS

Oakland, Cal.—The City Engineer has been directed to submit plans and estimate of cost of construction of a substantial wall or levee along the west side of the channel between Eighth and Twelfth streets, and the

construction of a culvert on Eighth street.

A recommendation of the ordinance authorizing the purchase of two street flushing machines at a cost of \$2,800 has been made by the Auditing and Finance Committee of the City Council.

The Board of Public Works has recommended that the City Council purchase a rattler for testing rock at a cost not to exceed \$275.

The Deputy Superintendent of Streets has been instructed to construct a concrete culvert across Cemetery creek at Thirty-eighth street, and proceed with the improvement of Grand avenue in front of the city's park lands.

Colorado Springs, Col.—The Aldermen have granted special licenses for the removal of garbage to George S. Elstun, Robert Mitchell, F. A. Morath and B. E. Girling.

Atlanta, Ga.—A thirty-three-year franchise has been granted the Southern Bell Telephone and Telegraph Company.

Covington, Ga.—An election will be held, October 9, to vote on issuing \$60,000 bonds, \$55,000 to be applied to establishing, erecting and equipping a system of water works and sewerage, and \$5,000 for building an annex to the public school building.

Joliet, Ill.—The Board of Commissioners have decided not to award contract for the north branch of the new channel of Spring street, for which contracts have been awarded on the main and east branches; the north branch is that part of the new channel running north from the north end of the main branch; regarding the disposal of material excavated the specifications say: "All of the material excavated in the north branch can be deposited within 100 feet of the channel; the people owning property adjacent to the channels shall have the right to use as much of the material excavated as they may desire for filling in their lots; several lots have been purchased by the district with a view to using the same as a dumping ground for part of the material excavated and are shown on the plans colored in red;" further information as to the disposal of the material excavated can be had by applying to the Commissioners.

Madisonville, Ind.—There will be a \$35,000 bond issue voted on November 5, the proceeds to be applied to municipal improvements.

Ardmore, I. T.—An election will be held, September 24, to vote on issue of \$144,000 improvement bonds.—Address City Clerk.

Colvill, Minn.—The Town Board will receive bids, October 1, 10 a. m., for \$5,000 6 per cent. 10-year semi-annual bonds for roads and bridges.—John Massmann, Chairman, Board of Supervisors; L. R. Daniels, Town Clerk.

Albany, N. Y.—Council has passed ordinances authorizing a driveway on Herkimer street, laying a pipe sewer in Bonheim street and providing for receiving basins at Washington avenue and Northern boulevard.

Omaha, Neb.—The matter of issuing \$50,000 bonds for park purposes will be submitted to a vote of the people.—S. R. Morris, Secretary, Board of Park Commissioners.

Gastonia, N. C.—Bids will be received, October 1, for the purchase of \$30,000 street improvement bonds; \$23,000 water works and sewer bonds; \$15,000 school bonds; interest 5 per cent., payable in 30 years.—E. N. Linberger, Treasurer.

Kings Mountain, N. C.—Bids will be received, October 3, for the purchase of \$50,000 5 per cent. 30-year light and water bonds.—F. L. Carpenter, Clerk.

Grand Forks, N. D.—It is estimated that the cost to install an incinerating plant would be about \$8,000.

Cincinnati, O.—The Board of Public Service is taking bids for the erection of the dumping and incinerating stations to be built at Crum and Second streets at a cost of \$75,000; Samuel Hannaford & Sons have the plans.

Dayton, O.—The Board of Service has passed a resolution requesting Council to set aside \$1,500 for fitting the boilers of the water works pumping station with smoke consumers in order to comply with the smoke abatement ordinance.—Robert Kline, City Engineer.

Altoona, Pa.—An ordinance has passed authorizing the collection and disposal of garbage by contract.

Childress, Tex.—A franchise has been granted to a company formed by local capitalists for a system of water works, electric lights and ice factory; the company will expend approximately \$100,000; there are now under construction in Childress improvements upon which the total cost will approximate \$250,000, not including the item mentioned above.

Two Rivers, Wis.—An ordinance is before Council authorizing an issue of \$20,000 bonds for docking and improving river.

BIDS RECEIVED

West End, Ala.—E. W. Jordan has been awarded contract for paving roads and sidewalks and constructing curbs and gutters at approximately \$160,625; the approximate figures were 100,000 square yards of paving, 30,000 square yards of cement sidewalks, 80,000 lineal feet of curb and guttering and 40,000 cubic yards of excavation; it is believed the total cost of the work will amount to \$250,000; the pavement to be laid is what is known as "tarcap" macadam, which is said to be as smooth as asphalt with better wearing qualities and much easier on stock; it consists of a layer of slag, then a layer of chert, on top of which is laid a thick coat of tar; a thin coat of screened sand or stone is then laid on the tar; the sidewalks will be paved with cement, and the curb and gutters will also be constructed of the same material; six firms entering bids: E. W. Jordan, Crockett Paving Co., Dunn & Lallande Bros., C. M. Burkhalter, Wright & Stratton Construction Company and the Byrson & Souders Construction Company.

Oakland, Cal.—The following contracts for street work have been awarded: for sidewalks south side of Sixty-third street, between Idaho and Baker streets, to J. W. Darrow; for grading, curbing and macadamizing north half of Forty-first street, between Piedmont avenue and Howe street, and the east half of Howe street from Forty-first street to a line 235 feet northerly, to Blake & Bilger Company; all bids received of the Hutchinson Company for grading, curbing, macadamizing, etc., of Twenty-first avenue have been rejected and the Clerk of the Council directed to readvertise for bids; the Board of Public Works has been authorized to grade Pleasant Valley avenue in front of the city property.

Bridgeport, Conn.—Contracts have been awarded by Public Works Director Biltz to the Pierce Manufacturing Company for a new sewer in Connecticut avenue 670 feet long and a 100 feet sewer in Seaview avenue to the B. D. Pierce, Jr., Company; the bids received were as follows: Connecticut avenue sewer, Pierce Mfg. Company, 98 cents per running foot; B. D. Pierce, Jr., Company, \$1.07 and E. T. Doolittle, \$1.10; Seaview avenue sewer, B. D. Pierce, Jr., Company, \$1.37; Pierce Mfg. Company, \$1.43, and E. T. Doolittle, \$1.50.

Washington, D. C.—It has been recommended that the contract for furnishing 500 dump cars for use on the Isthmus of Panama be awarded to the William J. Oliver Manufacturing Co. provided certain minor changes are made in equipment.

Freeport, Ill.—William Ascher has been awarded contract for constructing 44,790 square yards 4-inch macadam pavement on 4-inch native limestone foundation, for \$19,259.70; also 10,416 square yards brick gutter, 3 feet wide, filled with cement with 1-inch cushion coal, for \$17,301.90, and 31,783 cubic yards excavation, for \$9,539.90; also 31,460 feet Northern Ohio sandstone curb for \$20,449, and 7,840 square feet cement sidewalk on 4-inch gravel base for \$862; also 1,000 feet 24-inch sewer, \$2,250; 166 feet 18-inch sewer, \$248; removing 69 trees, \$276; manhole, \$35; total for entire work, \$70,967.50; M. Ford bid \$72,222.10 for the work, on many items bidding the same as Ascher.—G. W. Graham, City Engineer.

Joliet, Ill.—Robert Shannon, of Joliet, has been awarded contract for excavating the main branch of the new channel of Spring street at 47 cents a cubic yard, or \$32,900 for 70,000 cubic yards; E. L. Gallagher and Melvin Blain have been awarded the contract for the reinforced concrete retaining walls, at \$7.50 a cubic yard, for 73,000 cubic yards, making \$41,610.

Vincennes, Ind.—The contract for putting down concrete sidewalk and stone curbing on St. Clair street has been awarded to Foulkes, Forbes & Co., of Terre Haute; 12 cents for sidewalks, 46 cents for curbing and 15 cents for alley crossings; the bid of Mr. Pennington was 12½ cents for sidewalk, 48 cents for curbing and 15 cents for alley crossings.

Iowa City, Ia.—J. L. Berry was low bidder for constructing sewers, at \$3,830.25, as follows: 800 feet 25x36-inch brick sewer, 4-inch shell, in 8½ foot trench, at \$2.12; 130 feet 24-inch pipe sewer, at \$1.74; 680 feet 20-inch, \$1.32½; 560 feet 15-inch, 90 cents; all the pipe sewer to be laid in 7-foot trench; all excavating of clay; no ground water and no paving to be excavated and relaid; manholes and catch basins 9 foot depth, \$37; Wm. Horratin bid \$5,127.50.—J. O. Schultz, City Engineer.

Lexington, Ky.—The Home Construction Company has been awarded contract to macadamize Clay avenue from Main to High streets.

Baltimore, Md.—The bids for paving Wilkens avenue have been rejected by the Board

of Awards, and the Commissioner for Opening Streets will advertise for new bids; William M. Elder bid \$80,840.65 to lay a sheet asphalt pavement, and F. E. Schneider based their bid on vitrified brick and claimed that Contractor Elder had not followed specifications.

Bids have been received for the disposal of garbage; the Southern Products Company, of which Samuel A. Rice is President, was the lowest bidder for disposal of garbage, next year for \$71,000, and then to add \$3,000 additional to the cost each year until, at the end of ten years, the cost of disposing of the garbage under the contract will be \$98,000 a year; the only other bidder was David Peoples, whose price was invariably \$9,000 a year higher for each of the ten years than the other bid; in addition, he offered only \$50,000 for the garbage plant.

Bids were opened by the Municipal Board of Awards, September 4, for the city's new street gas and naphtha lamp contracts. The Consolidated Gas, Electric Light and Power Company offered to supply the gas at \$7.25 per lamp per annum, based on a consumption of 10,000 cubic feet of gas per lamp each year, with a charge of 7½ cents per 1,000 feet for all excess consumption. The company also offered to supply gas for the lighting of the municipal buildings at 85 cents per 1,000 cubic feet. The bidders for the contract for equipping, maintaining and lighting and extinguishing the gas lamps were as follows: Moses Newton, \$8.97½ per lamp per annum if given the contract for five years, or one year contract, \$10.31 per lamp per annum; two years, \$10; three years, \$9.24. The American Street Lighting Company (bids being on one year, two years, three years or five years, respectively), \$10.85 per lamp per annum, \$10.85, \$10.65 and \$10.65. The Welsbach Company, \$12, \$11.75, \$11.50, and \$11. The American Street Lighting Company and Moses Newton offered to take full charge of the lamps and furnish the gas at the following rates, one, two, three and five years, respectively: The American Company, \$22.85 per lamp per annum, \$22.85, \$22.50, and \$22.50. Moses Newton, \$23.30, \$23, \$22.24, and \$21.97½.

Boston, Mass.—Senator Frank J. Linehan has been awarded contract, as head of Atlas Construction Company, to build new piggery at Deer Island for \$4,953; James J. Brock has contract to excavate 300 feet on George street, Charlestown, for laying water pipe at 75 cents a foot for digging dirt and \$5 a cubic yard for rock blasting; S. H. Courie & Co. have contracts for sewers on Randolph road and at Whitney Park, Dorchester, and William H. Dolan for laying water and sewer pipes in West Roxbury.

Greenfield, Mass.—The contract for building a highway bridge over the Hinsdale Brook in Greenfield has been awarded to Peter Barber for \$996.80; other bidders were Fred T. Luy & Co., Springfield, Mass., \$2,059; John Kiley, Greenfield, Mass., \$1,650; Hanscom Construction Co., Medford, Mass., \$1,200; N. E. Downs, Seymour, Conn., \$1,073; the plans as drawn by the Clapp & Abercrombie Co. (W. A. Brown, Chief Engineer) call for about 82 yards concrete and 29 yards reinforced concrete; the railing, instead of iron pipe, is to be of concrete in the form of posts and panels, with vertical and horizontal reinforcement.

Medford, Mass.—Rowe & Perini Construction Company of Melrose, has been awarded contract by the Metropolitan Park Commission for grading, surfacing and other work at Middlesex Fells Parkway extension, Medford, at \$44,230, as follows: 30,000 cubic yards earth grading, at 40 cents; 3,500 cubic yards rock excavation, at \$1.20; 3,000 cubic yards rock excavation, \$1.90; 1,250 feet 10-inch vitrified pipe, 45 cents; 1,000 feet 12-inch pipe, 60 cents; 400 feet 15-inch pipe, \$1.25; 175 feet 18-inch pipe, \$1.60; 400 feet 24-inch pipe, \$2; 2,000 feet 6-inch pipe, underdrawn, 30 cents; 45 concrete catch basins and manholes, \$30 each; 250 square yards cobble stone gutters, 75 cents; 325 feet straight edge stone, \$1; 450 feet curved edge stone, \$1.50; 4,500 cubic yards loam surfacing, 30 cents; 4,000 cubic yards loam, to be furnished, \$1; 8,000 square yards gravel roadway surfacing, 45 cents; 10,500 square yards broken stone roadway surfacing, 30 cents; 3,000 square yards walk surfacing, 30 cents; one reinforced concrete culvert, 6 x 4 feet x 64 feet, 10-inch; one reinforced concrete culvert, 4x4x137 feet 9-inch; other bids were: Thos. F. Welch, West Roxbury, \$62,022.25; Falvey & Kelly, Dorchester, \$57,895; Bruno & Pettitt, Boston, \$55,571.25; Hugh Naun Contracting Co., Roxbury, \$53,661.25; John F. Gill Co., Somerville, \$53,437.50; Coleman Brothers, Boston, \$49,127.50.—John R. Bablin, Engineer.

Kalamazoo, Mich.—Fire Commissioner Knight has received five bids for the two new stations: George Rickman & Sons Company, \$15,775; G. Van Eck, \$14,329; J. J. Grofert, \$15,125; H. L. Vanderhorst, \$16,650; James Robinson, \$12,940.68; the above bids

were made exclusive of the cost of plumbing and heating; James Robinson was awarded the contract.

Bayonne, N. J.—Council has awarded contracts for the improvement of streets as follows: Andrew street and West Forty-third street, to Eastern Paving and Construction Company for \$11,128.50; Twelfth street, to Martin Murray for \$10,092.50, and Fifteenth street sewer, to same contractor for \$27,042.

Hoboken, N. J.—Council has received the following bids for the improvement of Broadway, with specification traprock; Thiel Construction Co., \$9,873; Nolan & Hornung, \$9,550.75; Cavanagh & Heagney, \$10,892.25; John Callery, \$7,807.59; Palisade Construction Co., \$10,671.50, and Charles Robertson, \$12,407.75.

Newark, N. J.—The contract for sewer in Lentz avenue has been awarded to James A. Christie for \$991.80.

Perth Amboy, N. J.—Contracts for laying sewers in Hall avenue and Penn street have been awarded to Martin Hansen at his bid for 4-foot sewer, \$4.60; 3-foot sewer, \$3.35; pipe sewer, \$1.75; manholes, \$37; basins, \$90; other bidders were Dahl & Dressler, 260 feet 4-foot diameter brick sewer, \$5.83 per foot; 3-foot diameter brick sewer, \$5.20; 18-inch pipe sewer, \$2.21; three manholes, \$30 each; six receiving basins, \$92 each; Johan Jensen, 4-foot sewer, \$7.05; 3-foot sewer, \$5.95; sewer pipe, \$2.35; manholes, \$45; basins, \$95; Christ Hyldahl, 320 feet of 4-foot diameter brick sewer, \$6; 3-foot diameter sewer, \$3.50; 18-inch pipe sewer, \$2; three manholes, \$33 each; six basins, \$92; the contract for removing the Surveyor General's office north of the City Hall has been awarded to the Fred Christensen Construction Company, their bid being the lowest.

Trenton, N. J.—Antonio de Lucia has been awarded the contract for building sewer No. 384, Parkside and Stuyvesant avenues, and drain 65, Princeton avenue; Ross and Basorella have been awarded the contract for sewer 379, Cottage place and Beechwood avenue.

Albany, N. Y.—Council has received bids for paving North Mohawk street with granite blocks laid in sand as follows: Grattan Construction Company, granite blocks, \$2.69 a square yard; curbing, 65 cents a lineal foot; circular curbing, 95 cents a lineal foot, and catch basins complete, \$1.25 each; Mulderry Bros., Albany, granite blocks, \$1.69 cents a square yard; curbing, 60 cents lineal foot; circular curbing, 90 cents a lineal foot; catch basins complete, \$90 each, and small catch basins, \$45 each; Nelson Brothers, Watervliet, granite blocks, \$2.97 a square yard; granite curbing, 65 cents a lineal foot; circular curbing, 98 cents a lineal foot, and catch basins, \$175 each; for paving Olmstead street and a portion of Factory street the bidders were: Grattan Construction Co., \$2.67 a square yard granite blocks; curbing, 65 cents a lineal foot; circular curbing, 92 cents a lineal foot, and catch basins complete, \$100; Mulderry Bros., granite blocks, \$1.69 a square yard; curbing, 60 cents a lineal foot; circular curbing, 90 cents a lineal foot, and catch basins, \$90 each, and small catch basins, \$45 each; Nealon Bros., granite blocks, \$2.89 a square yard; curbing, 65 cents a square foot; circular curbing, 98 cents a square foot, and catch basins, \$150 each; both contracts for paving these streets were awarded to Mulderry Bros., lowest bidders, but the firm has notified City Clerk Elliott and City Attorney Scanlon that the typewriter in making out their bids for the two streets made a mistake and that instead of being \$1.69 a square yard for the pavement it should have been \$2.69; Mulderry Brothers produced a copy of the original letter they furnished the typewriter with to prove a mistake was made; Council can compel the Mulderry Brothers to do the work, or else forfeit to the city the thousand dollar bond they gave; the Grattan Construction Company claims that if Mulderry Brothers made a mistake in their bids the Grattan Construction Company are the lowest bidders for the work of paving the streets named and are entitled to the contracts.

Elmira, N. Y.—The Board of Public Works have received bids for the construction of a 63-foot low truss bridge over Newtown creek at Linden place, and for a plate girder for the bridge over Newtown creek at East avenue; the East avenue bridge will have a reinforced concrete floor with gravel wearing surface; the Linden place bridge will have a plank floor; the Seneca Engineering Company bid \$1,225 for the superstructure of the Linden place bridge and \$8.50 per cubic yard for the concrete work; their bid was \$1.09 per cubic yard for excavation work on this bridge; for the superstructure of the East avenue bridge, \$7.20 per cubic yard for the concrete work, and \$2.41 for the excavation work; the United Construction Company bid \$855 for the superstructure of the Linden place bridge, \$6.87 for the concrete, and 55 cents per cubic yard for the excavation work; for the superstructure on the East

avenue bridge was \$1,262, \$6.87½ per cubic yard for the concrete work and 55 cents per cubic yard for the excavation work; the East avenue bridge work was given to the Seneca Engineering Company and the Linden place contract to the United Construction Company at the prices quoted.

Costello & Greagle were awarded contract for 2,200 square yards 2-inch sheet asphalt, 1-inch binder on 6-inch gravel concrete, 1:3:7, at \$2.31, including 550 cubic yards excavation, total \$5,082; also resetting 400 feet old curb on gravel, at 32 cents, and setting 1,890 feet Medina straight curb on gravel, at 78 cents, and 123 new headers on concrete, at 87 cents; total, \$1,709.21.—Thurber A. Brown, Assistant and Acting City Engineer.

Monroe, N. Y.—The Joseph Sharp Construction Company, Paterson, N. J., has been awarded contract for setting 1,400 feet cement curb at 50 cents per lineal foot; also 9,700 feet 4-inch cement sidewalk on 9-inch cinder foundation, at 20 cents, including excavation; 1,300 feet driveways and crosswalks, at 22 cents; 5,600 feet cobblestone gutters, at 10 cents.—Fred J. Knight, Engineer.

Schenectady, N. Y.—The Board of Contract and Supply has awarded contract for building Hose House No. 9 in Brandywine avenue to Lewis and Burroughs for \$13,206.05, and the plumbing and heating to Thomas F. MacGregor for \$1,781.29; bids were also received for a fire engine, and the bid was awarded to the Westinghouse Agricultural Company at \$2,560 for a gasoline engine; the Watrous Engine Works bids \$2,700 for a gasoline engine and the American LaFrance, Woodhouse Manufacturing and International Power companies bid \$5,000 for engines of the steamer type; the contract for a combination wagon was awarded to the Combination Ladder Company at \$1,500, which underbid the American LaFrance Company \$190.

The Board of Contract and Supply has awarded to Beckwith Brothers the contract for sanitary sewers in Grand street, underbidding Kellam & Shaffer, T. R. Crane & Company and W. D. Goodale & Company; the sewer job in Jerome avenue went to the same firm.

Utica, N. Y.—Estimates of the cost of repairs to No. 6 hose wagon have been received by the Board of Police and Fire Commissioners as follows: Bailey & Browne, \$273.51; Phil Hammes & Sons, \$277.50; the former bid was accepted.

Grand Forks, N. D.—B. O. Paulsness has been awarded the contract for a water main extension on Eighth street and Ione avenue from Dakota avenue to Ashland street; J. M. Carroll has contract for a sewer extension between University and International streets.

Carrollton, O.—Freshwater Bros. & Co., of Chester, W. Va., have contract for paving amounting to nearly \$19,000, using Carrollton brick with cement filler.

Dayton, O.—The Board of Service has awarded the contract for paving River street from Salem to Ferguson to Al. Wroe and Sons, the lowest bidder, at their bid of \$22,422.75 for Twentieth Century block.

Bids have been received for the purchase of siphons, the sale of the old iron on Dayton View bridge, and for the preliminary grading of Bomberger Park.

Lima, O.—Blodgett and Hardin have the contract for paving South Baxter street at \$1.38 per square yard; macadam may be the material used.

Marion, O.—Probst Brothers have been awarded contract for the installation of a new return system for heating the Court House.

Marysville, O.—Welch and Jones have the contract for paving Plumm street with Townsend block and cement filler at \$11.896.

Toledo, O.—Henry P. Streicher has the contract for paving Locust street with vitrified brick at \$5.617; Berea curb is to be used.

The County Commissioners have contracted with Garrigan Brothers to macadamize the roadway running from the Bay Shore road to the Cedar Point road for \$10,000.

Allentown, Pa.—Council has received bids for paving Third street from Hamilton to Liberty, as follows: Barber Asphalt Paving Company, Trinidad asphalt, \$2.04 per square yard; maintenance, 3 cents per yard per year; replacing pavement, \$2.25 per square yard; setting curbstone, 70 cents; set new cement curb, 55 cents; reset curb, 20 cents; relay brick gutters, 7 cents; relay cement gutters, 15 cents; relay cobble gutters, 7 cents; set bluestone headers, 35 cents. Warner-Quillan Asphalt Company—Trinidad, \$2.12; maintenance, 3 cents; replace pavement, \$2.45; set bluestone curb, 71 cents; set new cement curb, 50 cents; reset curb, 18 cents; relay brick gutters, 16 cents; relay cement gutters, 16 cents; relay cobble gutters, 6 cents; set bluestone headers, 37 cents. The contract was awarded the Barber Asphalt Company; the same company was the

only bidder, at \$2.07, for paving Court street from Sixth to Church, and was awarded the contract.

The Board of Control has received bids for the plumbing in the Sixth Ward as follows: John Gallagher—Wolf goods, \$2,586; Cooper, \$2,154, less \$50 for old system. H. B. Yingling & Co.—Wolf goods, \$2,800; Cooper goods, \$2,275; American H. V. Co.'s, \$2,025. Allentown Plumbing and Sheet Metal Company—Wolf goods, \$2,771.34; Cooper goods, \$2,271.51. The contract was awarded to John P. Gallagher, for Cooper goods, at \$2,104, the work to comply with the rules of the Board of Health of the city.

Bids for curbing and paving in the Fourth Ward have been submitted as follows: Henry Klase—Curb, 80 cents per lineal foot; vitrified brick, 8 cents per lineal foot; reset flagging, 12 cents per lineal foot; new flagging, 24 cents per square foot. Ackerman & Co.—Curb, 83 cents per lineal foot; vitrified brick, 12 cents per lineal foot; reset flagging, 25 cents per lineal foot; new flagging, 20 cents per square foot. The contract was awarded to Henry Klase.

Bids for the new heating system for the Washington building have been submitted as follows: Anderson Darragh Company, Limited, \$5,745; William H. Taylor & Co., \$5,889; the contract was awarded to W. H. Taylor & Co.; buildings are to be heated and ventilated in accordance with the State laws, and to 70 degrees Fahrenheit in zero weather.

Butler, Pa.—Burns Brothers were low bidders for laying sewer in Lookout avenue between Maple avenue and B. & O. tracks, at 95 cents for 8-in. sewer; \$28 for manholes; flush tanks, \$40; Y branches, \$250; F. E. McQuiston bid \$1.12 per foot for sewers, and Harry Grief and George Shaffner, \$1.35 each.—Borough President Dunn. For paving Water street bids were received from Tony Morelli, \$2,527; Burns Brothers, \$2,660, and Boyer, \$2,792.

Reading, Pa.—Councils have awarded the following contracts: Paving Fifth street from Walnut to Buttonwood streets with vitrified shale block, to Fehr & O'Rourke, at \$10,977.22; paving Schuylkill avenue from Oley street to the river bridge with vitrified brick, to Fehr & O'Rourke, at \$6,678; paving Greenwich street from Eighth to Ninth streets with vitrified shale block, to Fehr & O'Rourke, at \$3,539.80; paving Chestnut street from Eighth to Ninth streets with vitrified shale block, to Fehr & O'Rourke, at \$3,756.50; paving Poplar street from 120 feet north of Elm street with granite block, to Samuel Bobst and James Dautrich, at \$3,604.13; paving Cotton street from Tenth to Thirteenth streets with vitrified shale block, to Fehr & O'Rourke, at \$9,087.75; and paving Eighth street between Washington and Walnut streets with vitrified shale block, to Fehr & O'Rourke, at \$3,279.94.

Scranton, Pa.—Bids were received as follows by Director Acker for paving South Washington avenue: paving with sheet asphalt, Barber Asphalt Company, \$2.55 a square yard; Lee & McDonald, New York City, \$2.15 a square yard; straight concrete curb, metal guard, Barber company, 75 cents a lineal foot; Lee & McDonald, 97 cents a lineal foot; circular concrete curb, metal guard, Barber company, \$1.30 a lineal foot; Lee & McDonald, \$1.15; straight stone curb, Barber company, 75 cents a lineal foot; Lee & McDonald, 60 cents; circular stone curb, Barber company, \$1.75 a lineal foot; Lee & McDonald, \$1.30; new side basins, including house pipe connection, Barber company, \$90 each; Lee & McDonald, \$50; resetting old curb, Barber company, 35 cents a lineal foot; Lee & McDonald, 10 cents.

Sharon, Pa.—Council has awarded to H. B. Chase of Youngstown, O., the contract for \$10,000 worth of paving; South Dock street will take 16,000 square yards of Porter block, with Pioneer filler and sand dressing, foundation to be crushed limestone, concrete or gravel; Engineer Nichols is preparing the plans.

Sharon, Pa.—Wm. McIntyre and Sons have the contract for extending the sewer system and for paving several streets at \$75,000.

Sharpsville, Pa.—Miller & Bornbeck have been awarded contract for paving 12,000 square yards with vitrified block on 6-inch concrete and 1-inch sand cushion, at \$1.86 per square yard; A. E. Wale & Co. bid \$2.63 and Wm. McIntyre Sons, \$1.97.—N. A. Graber, Secretary.

Council has awarded Alderman Charles P. Walter contract for laying standard vitrified block brick in Coyle, Curtis and south alleys at \$2 a square yard and granite curbing at \$1.25 a foot; there will be 125 square yards in Angle alley, cost \$597.20; 110 yards, Curtis alley, \$567.20; 450 yards, South alley, cost \$2,383.20.

York, Pa.—The Fire Committee of Council has divided contracts for 2,000 feet of fire hose equally among P. A. & S. Small, representing the Boston Woven Hose Company;

Frey & Thomas, the York Special Brand hose; Charles E. Small, the Fabric hose; W. C. Throne, the Diamond hose, and William I. Crane, the Eureka hose; the price was \$1,500.

Johnson City, Tenn.—The Barber Asphalt Paving Company was awarded contract for paving with 1½ asphalt, 1-inch binder, on 6-inch slag concrete foundation, at \$2.14½ per square yard, and submitted alternative bids on bituminous macadam or paint coat, 2-inch asphalt, at same price. The Southern Bitulithic Company on bitulithic bid \$2.05, on 6-inch slag bituminous foundation; \$2.30 on 6-inch slag concrete; \$2.40 on 6-inch stone concrete; \$2.15 on 6-inch slag bituminous; \$2.20 on 5-inch slag concrete; \$2.30 on 5-inch stone concrete. The Hassam Paving Company bid \$1.75 per square yard on 6-inch Hassam pavement. The Southern Paving and Construction Company bid \$2.21 for 1½-inch asphalt, 1-inch binder, on 6-inch slag foundation; \$2.03 for paint coat, 1½-inch asphalt; \$2.53 for brick, on 6-inch slag concrete; \$2.35 for brick, on 4-inch slag; \$1.89 for paint coat, 1½-inch asphalt, on 4-inch slag concrete; \$2.05 on 1½-inch asphalt, 1-inch binder, on 4-inch slag concrete.

S. H. Pouder has been awarded contract for curb and gutter, at 49½ cents, total, \$1,506.75; and sidewalks, at 15 cents, total, \$3,305.25; grand total, \$5,597; C. A. Sharp bid 74 cents for curb and gutter and 14½ cents for sidewalks, total, \$6,487.66; and Geo. R. Brown, 55 cents for curb and gutter and 15 cents for sidewalks; total, \$5,711.70.

The Hassam Paving Company was awarded contract for constructing 3,750 ft. vit. clay sewers, in 6-ft. trench, clay excavation, no ground water, macadam paving to be excavated and relaid, at 43 cents, and 4,285 ft. 8-in. at \$9.5 cents, including house connections and laterals; manholes, 6-ft., \$39; Y connections, \$1.80; wages of common labor, \$1.75 per day; total, \$5,852.45; Jas. A. Hanniffin bid \$8,549.70; grand total for paving street, gutter, sidewalks and sewers, \$114,209.45.—L. N. Wilson, Jr., City Engineer.

Dallas, Tex.—Bids have been received on laying sanitary sewer pipe from George S. Vivian, Dallas Home Improvement Company, C. W. Olcott, George R. Ennison and B. J. Blackmon.

Salt Lake City, Utah.—The Board of Public Works has let three contracts for small sidewalk extensions to S. Birch, the only bidder. They are: Extension 123, on west side of First West street from Eighth to Ninth South streets, 6-foot walk, at \$1.29 per foot; Extension 124, east side of Post street between Fourth and Fifth South streets, 4-foot walk, at 81 cents a foot; Extension 125 east side of Post street between Fifth and Sixth South streets, 4-foot walk, at 84 cents a foot. The following estimates were approved: S. Birch, curbing and guttering, \$3,438.71; Pittsburgh Testing Company, for testing pipes, \$219.10. Contract has been awarded to J. P. O'Neil, of Ogden, for sidewalk extension No. 89, at his bid of 19 cents a square foot. There are 185,640 square feet of sidewalk in the extension, and the total cost will be \$35,271.60, which is within the estimate. The other bidders were S. Birch, who wanted 22 1-10 cents a square foot, or a total of \$41,025.44, and J. P. Hanley, who offered to do it for 19½ cents a square foot, which made his bid total \$36,675.90.

Petersburg, Va.—Council has awarded to A. J. Murphy, contract for paving roadway of Wythe street with Logan block, at \$11,500.

Centralia, Wash.—Council has let contract to construct the trunk sewer system to the Northwest Bridge Company, of Tacoma, the contract price being \$22,150; other bidders were as follows: Lister Construction Company, \$22,275; E. M. Moore, \$22,410; Secor Brothers & Mears, of Portland, \$26,174.85. The City Engineer's estimate on the work was \$22,500.

Elkins, W. Va.—Water and sewer bonds, \$40,000, were awarded to A. J. Hood & Co., of Detroit, Mich., by Council; the proceeds will be expended on additional pumps, reservoirs, etc., and on an extension of the sewerage system.

Madison, Wis.—The State Board of Control has awarded two contracts for building three cottages at the Home for the Feeble Minded at Chippewa Falls to Otto Neitge, of Mankato, Minn., for \$96,600; there were eight bidders, the highest being \$164,000; the plans and specifications were drawn by Architects Ferry & Clas, of Milwaukee. Isenberg Brothers, of Baraboo, secured the contract for an addition to the "baby cottage" at the State public school at Sparta, his bid, the lowest of five received, being \$3,500; plans and specifications were drawn by Architects Claude & Starck, of Madison.

Racine, Wis.—Bids have been received for a steel bridge from P. W. Galloway and the Milwaukee Bridge Company, the former to build the substructure for \$8,175, and the latter the steel iron work for \$5,700; total, \$13,875.

PERSONALS.

BAKER, WILLIAM H., Mayor of Lockport, N. Y., will represent his city at the eleventh annual convention of the League of American Municipalities at Norfolk, Va., September 18-20.

BENSON, WILLIAM R., Assistant Director of Public Works, Philadelphia, Pa., has been appointed Chief of the new bureau created by Mayor Reyburn by the consolidation of the Bureaus of Highways and of Street Cleaning, and William R. McKnight, Jr., has been named as Assistant Director of Public Works.

BIRD, P. P., Chicago, Ill., has been appointed Smoke Inspector of the city under an ordinance which became effective September 1; he was formerly steam engineer of the South Chicago works of the Illinois Steel Company.

BOTTOMLEY, CHARLES, Building Commissioner of Bridgeport, Conn., died recently in England, where he went in search of health, and his remains were brought here, the funeral being attended by Mayor Marcus L. Reynolds, members of the Board of Aldermen and other city officials.

BURTON, THEODORE E., Member of Congress from Ohio, chairman of the Rivers and Harbors Committee, and recently appointed by President Roosevelt as chairman of the Inland Waterways Commission, has been nominated by acclamation by the Republicans for Mayor of Cleveland, O., in opposition to Mayor Tom L. Johnson, who will undoubtedly be renominated by the Democratic party for a fourth term.

COOLEY, LYMAN E., of Chicago, Ill., recently visited Racine, Wis., to consult with the special Water Works Committee relative to the appraisalment of the local water plant.

CUNNINGHAM, E. W., Erecting Superintendent of the Pittsburgh Filter Manufacturing Company, has resigned to accept a position with Bowman Brothers, contractors, of McKeesport, Pa., who are building the new filtration plant in that city.

FREEMAN, JOHN R., of Providence, R. I., is to have charge of the engineering force of

the New York State water power resources, which work has been begun in the Sacandaga valley. Freeman's salary will be \$7,500 and that of his assistant, Horace Ropes, formerly with the New York City Board of Water Supply, \$6,600.

FIRESTONE, ROBERT J., sales manager of the Firestone Tire and Rubber Company, Akron, O., is on a trip to the Pacific Coast and Mexico and will establish a branch office in the City of Mexico. John D. Hodgkins, formerly manager of the St. Louis, Mo., branch, has been transferred to Atlanta, Ga., and O. O. Petty has been made manager of the St. Louis office.

FORESMAN, S. T., Mayor of Williamsport, Pa., has returned to his duties after nearly two months' absence abroad, having visited London, Carlsbad and other parts of Germany, Bohemia, Australia and Southern France.

HAWKES, EDWIN, Malden, Mass., was for the tenth time refused confirmation as a member of the Street and Water Commission by a vote of 4 to 3 by the Board of Aldermen, and Mayor Charles D. McCarthy immediately sent in his name for the place for the eleventh time.

HEIM, E. E., of the District of Columbia Engineering Department, has returned after a five weeks' sojourn in Europe, during which time he visited Berlin, Brussels, Paris, London and other cities.

LANDRETH, OLIN H., Albany, N. Y., having recently severed his connection with the New York State Department of Health, and having been granted a year's leave of absence from his teaching duties at Union College, will devote a larger portion of his time to the work of the Albany Sanitary Bureau, of which company he is Engineer and Secretary.

LILLIE, FRANK M., City Engineer of Youngstown, O., recently spent a few days of his vacation at Atlantic City, N. J., recuperating from hay fever.

LODER, ARTHUR E., has been appointed Chief Engineer of the Highway Commis-

sion of Los Angeles County, Cal., which is preparing plans for the construction of a system of permanent highways to cost approximately \$3,000,000. Mr. Loder was formerly First Assistant Engineer of the U. S. Office of Public Roads.

DE LONGPRE, PAUL, artist and composer, of Los Angeles, Cal., has started a movement to provide a municipal band for Los Angeles, and has laid the details before Mayor Harper. He wants forty-five American citizens, all soloists, to form a band which in time will tour the United States and Europe spreading the fame of Los Angeles and Southern California. He thinks this band should give two concerts daily every day and night in the year, preferably in the public parks. Each evening there should be a parade through the different principal streets, with Central Park as the terminus. There should be a big stand of Moorish architecture, with 500 or 600 extra chairs or benches, and there a select program should be rendered.

MCDONALD, E. L., attorney for the Louisville Title Company, of Louisville, Ky., has been named by Mayor R. W. Bingham as a member of the commission to examine into the affairs of the Louisville Water Company under the old management, W. Marshall Bullitt being the other member.

MARKS, WILLIAM D., M.A. Inst. E.E., expert in gas and electricity for the Corporation Counsel of New York, has removed from Philadelphia and opened offices in the Park Row Building, New York City.

MORROW, CAPT. JAY J., Engineer Commissioner of the District of Columbia, has gone to St. Louis, Mo., where he will be joined later by James Knox Taylor, Supervising Architect of the Treasury, and Dr. William E. Chancellor, Superintendent of Public Schools. The three officials comprise a special commission created by Congress for the investigation of school buildings with a view of recommending certain improvements in Washington, and they will inspect the various new school buildings in St. Louis, as well as in Cleveland and Chicago.

LOWEST BIDS RECEIVED FOR SEWERS

Length, Feet	Inside Dimensions, Inches	Material	Thickness of Shell	Depth of Trench to Bottom of Sewer	Material to be Excavated	Ground Water to be Handled	Kind of Paving to be Excavated and Relaid	Price Bid per lineal Foot	Mean of all Bids	REMARKS
WATERTOWN, WIS.										
60	20	Iron.....		6'	Gravel.....	Yes	None	\$8.00	\$8.50	Manholes 9 ft. deep, \$36.50;
1,600	20	Vit. pipe.....		12'	".....	"	"	1.90	1.92	flushtanks, including ap-
230	18	".....		9'	".....	"	"	1.70	1.72	pliances, \$70.; sewer-pipe
520	12	".....		10'	".....	"	"	.91	.95	surface water inlets, \$10;
1,335	10	".....		8'	Clay.....	No	"	.70	.70	Wages of common labor,
2,705	8	".....		8'	".....	"	"	.65	.65	\$2.00.
488	15	".....		9'	".....	"	"	.93	.94	
136	12	".....		5'	".....	"	"	.88	.89	
155	10	".....		5'	".....	"	"	.69	.69	
STURGEON BAY, WIS.										
646	15	Vit. pipe.....		5' av.	Sand.....	No	None	.66		Manholes 9 ft. deep, \$29.65.
380	12	".....		8' av.	".....	"	"	.50		Surface water inlets, 3
3,080	8	".....		5'	".....	"	"	.31		length of 30" pipe, \$15.40.
MEDINA, O.										
1,325	15	vit. pipe.....						.297	.3047	33,922 cu. yds. earth exca-
3,180	12	".....						.22	.2257	vation, 35 cts.; 10 cu. yds.
1,865	10	".....						.165	.1713	rock excavation, \$2.00;
33,249	8	".....						.11	.1129	252 cu. yds. brick mason-
545	6	".....						.066	.0677	ry, \$10.00; 49 cu. yds.
42	12	Branches.....						.99	1.0157	concrete masonry, \$7.00.
6	10	".....						.748	.7763	Prices in table for pipe
472	8	".....						.495	.5079	only. Laying, all sizes, 4
5	6	".....						.207	.3047	cts. a ft.; subdrains, 30
WELLSVILLE, O.										
680	8	Vit. pipe.....		6 1/2'	Clay.....	Yes	Brick	0.65		Two manholes, 7 ft. deep,
25	8	".....		11'	".....	"	"	.90		\$98.00; flushtanks, \$93.-
WAVERLY, IOWA										
3,300	24	Vit. pipe.....		8'	Loam and sand.....			1.34	1.59	50; common labor, \$1.75.

SLACK, EDWIN S., for many years Superintendent of the Water Company, Somerville, N. J., died recently at his home at Raritan, aged 55 years.

SMITH, RAY P., Assistant Chief of the Fire Department of Anniston, Ala., who joined the Department three years ago, has been appointed Fire Chief.

SUTTON, JOHN R., Lieutenant of Police of Washington and Harbormaster of the District of Columbia, recently celebrated the twenty-ninth anniversary of his assignment to duty on the river front, where he was detailed as Fish and Oyster Inspector five years after joining the Police Department.

TRUMBauer, JACOB S., Street Commissioner of Allentown, Pa., with Mayor Schaeffer and Dr. Truman Martin, recently visited towns in Ohio to investigate the matter of oil sprinkled roads. The party also visited Dr. Martin's oil wells in Ohio.

VANCHEROT, JULES, Paris, France, whose work as Chief Landscape Architect at the Paris Exposition in 1900 won for him the decoration of the Legion of Honor and decorations from several other European countries, and who is now in charge of all the gardens of Paris, arrived in New York City recently, having become associated with a New York firm of landscape architects, and will spend two months each year in New York.

WAGNER, L. J., has been appointed Superintendent of Streets and Water Works of Rome, Ga.

WIRGMAN, HARRY, member of the Council of Louisville, Ky., has been appointed by Mayor R. W. Bingham to succeed E. T. Schmitt as City Treasurer. Mr. Wirgman was formerly proprietor of the Central Methodist Publishing Company, but sold out his plant two months ago. He was appointed a member of the General Council by Governor Beckham. He maintains an office at 339 West Green street.

INCORPORATIONS

Bath Electric Service Company, Jersey City, N. J.; to operate electric light, gas, water and power plants; capital, \$100,000. Incorporators: Luther H. Leber, Arthur A. Lozier, Frederick M. Dayton, as above.

Citronelle Light and Power Company, Citronelle, Ala.; to build and operate an electric light and power plant; capital, \$25,000. Incorporators: J. A. Shannon, President; S. R. Shannon, Secretary-Treasurer, and others.

Consumers' Electric Company, Hot Springs, Ark.; capital, \$100,000. Incorporators: Atwood Benton of Kansas City, M. A. Elsele and S. A. Stallcup.

Fairmount Gas Company, Chicago, Ill.; to manufacture acetylene gas; capital, \$7,000. Incorporators: M. F. Porterfield, J. M. McCabe, Charles F. Crow.

Ferris Light and Power Company, Ferris, Tex.; capital, \$4,000. Incorporators: W. W. Batchelor, C. A. Weatherford and others.

Merchants' Electric Light and Power Company, Newark, N. J.; to supply light, heat and power; capital, \$250,000. Incorporators: Frank Lowrie, New York; Richard S. Carrick and Jean R. Blackroth, of Jersey City.

Monterey County Water Company, San Francisco, Cal.; capital, \$2,000,000. Incorporators: Charles E. Green, H. G. Platt, A. D. Shepard and others.

Northwestern Bridge and Construction Company, St. Cloud, Minn.; capital, \$50,000. Incorporators: L. L. Sartell and others.

Proposals

SUBWAY AND APPURTENANCES

Department of Public Works.

Reading, Pa., Sept. 4, 1907.

Sealed proposals will be received at the office of the City Clerk until 2 p. m., Wednesday, September 25, 1907, for the construction of subway and appurtenances under the P. & R. Railway tracks at Spring street, in the City of Reading, Pa.

Each bid or proposal must be accompanied by a bond executed by a trust company existing under the laws of the State of Pennsylvania, or authorized to do business in the State of Pennsylvania, or a certified check in the sum of \$15,000. And the successful bidder will be required to enter into a contract bond in the sum of forty per centum of the estimated cost; said bond to be executed by a trust company existing under the laws of the State of Pennsylvania, or one authorized to do business in the State of Pennsylvania.

Plans and specifications of the work can be seen and proposal bonds had at the office of the City Engineer.

All proposals must be endorsed "Proposals for the Construction of Subway" and addressed to the Board of Public Works, in care of Caleb Weldner, City Clerk, Reading, Pa.

The right is reserved to reject any or all bids.

By order of the Board of Public Works.

ELMER H. BEARD,
City Engineer.

WATER FILTERS

Atlanta, Ga., Sept. 7, 1907.

Sealed proposals will be received by the Board of Water Commissioners, Atlanta, Ga., until 4:00 o'clock p. m. Wednesday, October 23, 1907, for furnishing and erecting complete a sectional washing pressure filter plant for the City of Atlanta, Ga. Said filter plant to consist of eight (8) units, each unit 8 feet in diameter and 20 feet long. Said filter plant to have a minimum guaranteed daily delivering capacity of 4,000,000 gallons when one (1) unit is out of service during washing period. Guaranteed capacity of proposed filter plant to be tested before accepted. Capacity to be timed and delivery measured by direct discharge into clear water basin.

Said filter plant to be erected at water works pumping station No. 2, on Southern Belt Railroad, about three (3) miles from the city.

Plans and specifications can be had on application to General Manager, Atlanta Water Works, Atlanta, Ga.

The Board reserves the right to reject any or all bids.

BOARD OF WATER COMMISSIONERS,
PARK WOODWARD,
General Manager.

STREET PAVING

Billings, Mont., August 27, 1907.

Sealed proposals for the paving with shale brick of certain portions of streets of the City of Billings, described in the resolution creating Special Improvement District No. 21, will be received by the City Council up to 8 o'clock p. m. of October 1, 1907, addressed to the undersigned, and endorsed: "Proposals for paving."

The work for which proposals are invited consists of approximately 6,305 square yards of shale brick pavement; the foundation for which is otherwise provided for.

Each proposal must be accompanied by a certified check for \$500 on some responsible bank in the City of Billings, and made payable to said city. The successful bidder must enter into an undertaking in the sum of \$2,000, with approved sureties. Plans and specifications are on file in this office.

The right is reserved to reject any and all bids.

J. D. MATHESON,
City Clerk.

SEWER

Office, Commissioners of the District of Columbia, Washington, D. C., Sept. 9, 1907.

Sealed proposals will be received at this office until 12 o'clock, noon, Monday, September 30, 1907, for constructing sewer in the District of Columbia. Forms, specifications and necessary information may be obtained at Room 43, District Building, Washington, D. C.

HENRY B. F. MACFARLAND,
HENRY WEST,
JAY J. MORROW,
Commissioners.

WATER WORKS SUPPLIES

Office of the Board of Water Commissioners of the City of Los Angeles.

August 19, 1907.

Sealed proposals will be received by the Board of Water Commissioners of the City of Los Angeles, at the office of said Board, 440 South Hill street, until 3:30 p. m. of September 30, 1907, for furnishing and delivering f. o. b. cars at Los Angeles, California, approximately 6,000 tons of standard hub and spigot cast-iron water pipe, as follows:

920 pieces 24-inch; 955 pieces 20-inch; 670 pieces 20-inch; 490 pieces 20-inch; 2,500 pieces 12-inch; 500 pieces 10-inch; 1,000 pieces 8-inch; 2,000 pieces 6-inch; 2,500 pieces 4-inch. Specifications can be obtained, upon application, from the Secretary, at 440 South Hill street.

A certified check for 5 per cent. of the amount of the bid, made payable to Jno. J. Fay, Jr., President of the Board, is to accompany each proposal, to be held as a guarantee that a contract with bond approved by the said Board will be entered into by the party whose bid is accepted, in accordance with the terms of the said bid.

The Board reserves the right to reject any or all bids, in whole or in part.

WM. MULHOLLAND,
Superintendent.

SEWERS AND LATERALS

Paducah, Ky.

Sealed bids will be received by Board of Public Works until 3 p. m. October 1, 1907, for constructing about fourteen miles of six-inch vitrified pipe and sewer laterals, ranging in depth from twelve to six feet. A certified check on some bank of the City of Paducah, payable to John J. Dorian, City Treasurer, must accompany each bid. The right to reject any and all bids is reserved.

L. A. WASHINGTON,
City Engineer.

Civil Service Examinations

Cement Chemist.—The United States Civil Service Commission announces an examination September 18, 1907, to secure eligibles to fill a vacancy in the position of chemist qualified as a cement tester, at \$125 per month, for duty at the cement mill, Roosevelt, Ariz., and similar vacancies as they may occur. Apply on Form 1312.

Identification Clerk.—The United States Civil Service Commission announces an examination, October 2, 1907, to secure eligibles to fill two vacancies in the position of record clerk, at \$1,200 per annum, in the penitentiaries at Fort Leavenworth, Kan., and Atlanta, Ga. At the examination practical questions on the Bertillon system of identification will be asked. Apply on Form 1312.

WANTS

WANTED.—Municipal engineer; graduate; permanent; state experience, salary wanted, etc. Indian Territory. Address No. 000, care Municipal Journal and Engineer.

DRAFTSMEN.—Highest possible salaries for men experienced in any line of drafting; offices in 12 cities; any location desired; list of openings free. Hapgoods, 305 B'way, N. Y.

GRAVITY & PRESSURE FILTERS

WATER PURIFICATION FOR ALL PURPOSES
WATER SOFTENING & FILTRATION SYSTEMS.

WM. B. SCAIFE & SONS CO. FOUNDED 1802 PITTSBURG, PA.